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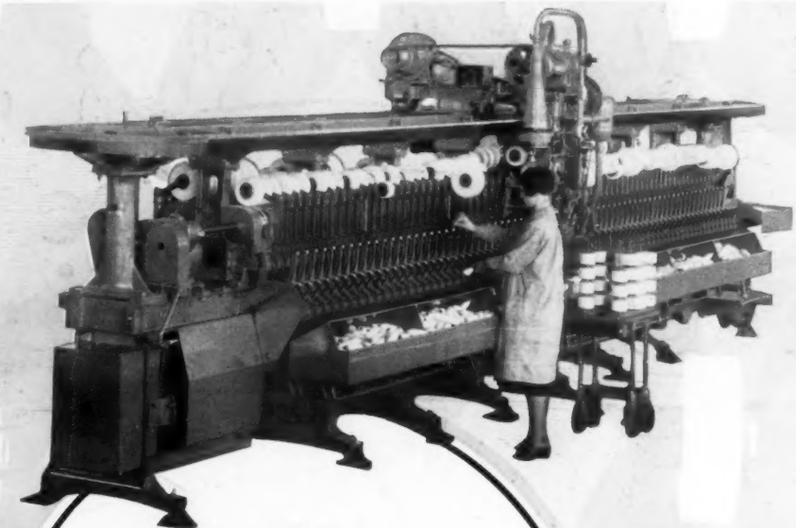
JULY, 1930

COTTON

THE TEXTILE MANUFACTURING JOURNAL



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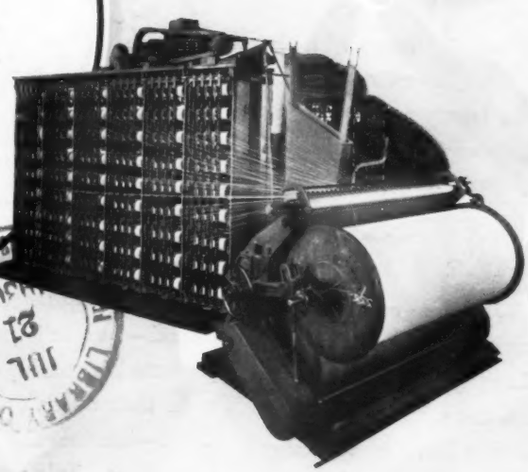

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King Cotton visits the realm of King Cosmetic

THEY tell a story of how King Cotton once paid a visit to King Cosmetic. Long and earnestly the two monarchs conferred. And good King Cotton learned a great lesson from King Cosmetic. It was the lesson of trademarking and identification. And it was destined to help bring new prosperity to the land of Cotton—just as it had helped bring high fortune to the subjects of King Cosmetic.

❖ ❖ ❖

TODAY YOU WILL FIND comparatively few face powders or perfumes that are unbranded. Long ago the makers of cosmetics realized the value of trademarking and identification. On the other hand, you *will* find unbranded cottons —but it is significant that *you will not find as many today as you would have found a year ago.*

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If you are considering the advisability of trademarking, Kaumagraph would be glad to work with you. Our years of experience, our Research Laboratory, our service department... are at *your* service. Write for additional information—or for a representative.

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July, 1930

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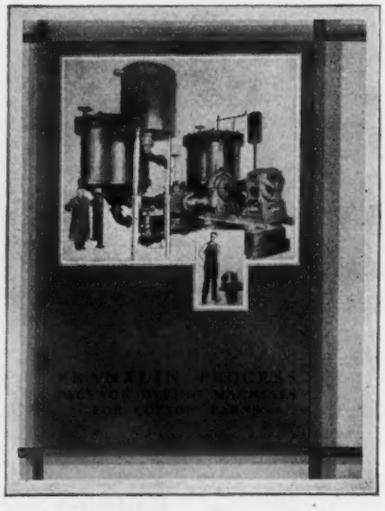
Many facts about the Franklin Process Package Dyeing Machine are given in this new 30 page catalog. It also suggests the procedure necessary to get additional facts.



The time to investigate the relative merits of package dyeing equipment is before you are actually in the market, not when you are urgently in need of it.

If you put off investigation until the last minute, the investigation may not be thorough. Or if you make it thorough, serious losses may result because of delayed action.

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Ad. 362

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COTTON

Vol. 94 July, 1930 No. 9

Modern Practices in Dyeing, Bleaching *and* Finishing

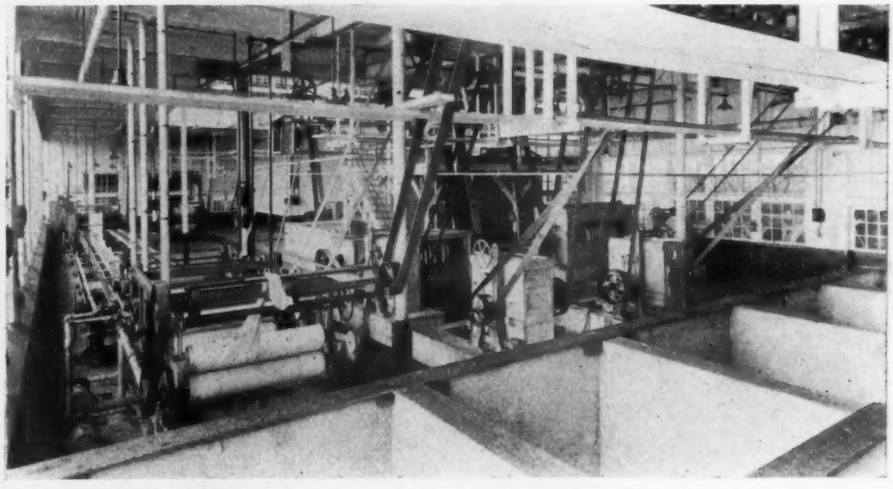
By M. A. Golrick
Production Manager and Plant Engineer,
Dutchess Bleachery, Inc.

THIS ARTICLE is the first in a series by Mr. Golrick covering the various operations in dyeing, bleaching and finishing; giving much information which is based upon his experience and opinion. The present discussion covers the receiving and laying-out of the goods, singeing, mercerizing, de-sizing, kier boiling, bleaching and drying. The next article will take the processes up at this point and continue through a discussion of dyeing, drying, calendering, folding, etc.—THE EDITOR.

THE PRESENT market conditions of highly competitive operation of textile finishing plants, due to surplus plant capacities in comparison to market consumption, has forced this branch of industry into the position of accepting a large percentage of goods to be finished at cost prices for well operated plants. Only plants which have a superior finish for one particular line, or what is commonly known as the "call of the trade," for some style have been able to retain a price which gives a fair return on the plant investment during this highly competitive period. This condition has existed since the war and each plant has endeavored to build up its volume of total yardage by accepting some goods at cost prices. The practice of finishing goods at cost prices by many plants has resulted in lowering the general price to a level which does not permit an adequate investment return for most plants, while many have had to suspend operations because of financial failure.

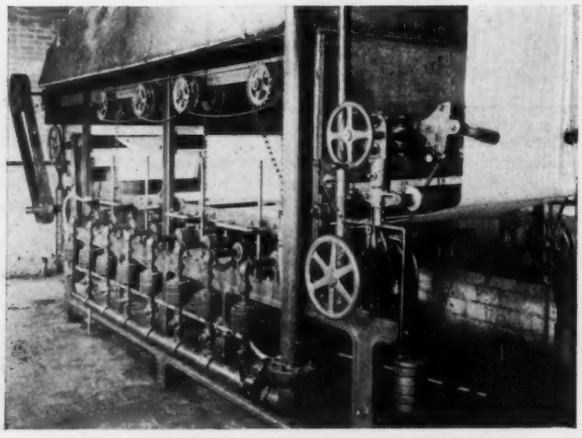
When an industry gets in such a weakened condition, it is well to analyze a plant for its separate operations and view possible improvements, better control methods and lower costs by eliminating all methods which have become obsolete. Many plants today still continue to operate under conditions which were in force in the past, but changes make it imperative that every plant should be brought up to date in its individual operations. Each separate unit or department should be checked in itself and in its relations with the other departments, to get the best results. The finishing of cloth requires each department to carry out an operation upon which succeeding operations must be performed to get exact results.

The desired result of finishing cloth is to satisfy the converter or customer with a product which meets his requirements. The chief requirement of the customer is that the finishing plant maintain a market standard at all times. In many cases, plants are unable to reproduce finishes to an exact standard. This is due to many variable conditions which must be reduced to a minimum to remove the finishing of cloth from its status of an art and make it an exact set of known conditions. To place the industry in this plane, it is required that positive control and accurate measuring devices be installed and used. When a plant has fulfilled these requirements, it is then in condition to du-



A Compact Small Bleachery. Kiers in middle of floor, with washers and squeezers in front of white bins. Along left edge is mercerizing range, with 3-roll water mangle, scutcher overhead, in background. Singeing machine in concrete room to right of water mangle, Grey room beyond partition behind mangle. Finishing room beyond partition at right.

Photos, courtesy H. W. Butterworth & Sons Co.



An 8-burner singe installed in a southern bleachery.

plicate results as well as to lower costs.

The methods used for each process will be outlined by following a general scheme of the routing or process of goods in a cotton finishing plant.

Receiving and Laying Out.

The first step in processing goods is the receiving of goods which are often in bales or rolls and should be checked for weight to determine if any apparent shortage of yardage exists. The weight should then be compared with the shipping invoice or the customer's order and a set of process or routing sheets made, one for each department or operation that handles the particular goods, so that a standard set of operations will be performed on the goods. The sheets permit each department foreman to know the type of goods to be handled for each day so that he may plan for the most economical operation of his particular department.

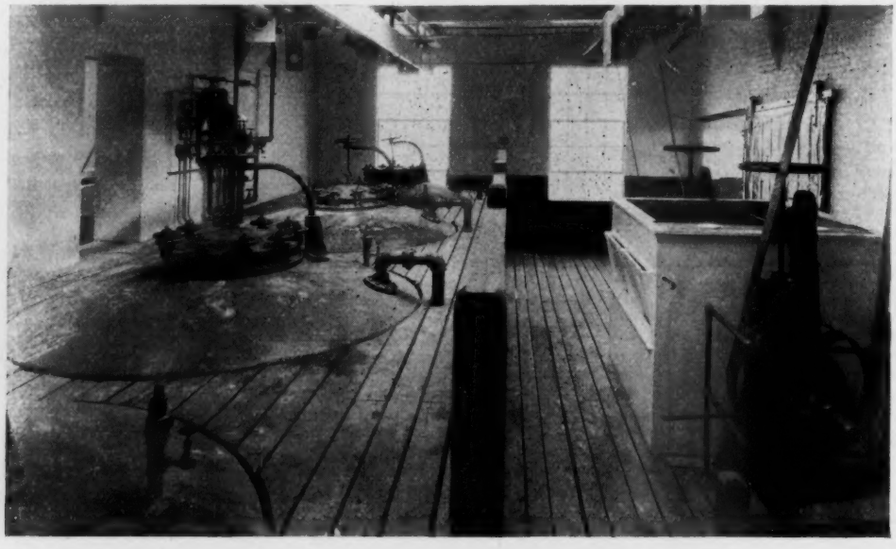
The routing sheet is sent to the Grey Room and enables the foreman of that department to know how the work is to be laid out. The goods may be of a type which has a face and, therefore, must be laid out for the sewing machine operators so that they will be properly sewed. The seams may be sewed on different types of machines such as single seam, three needle or flat seam, and butt seam. The type of seam should be indicated on the routing sheet which should be as complete as possible for this and all succeeding operations.

In receiving goods, it is good practice to take a one yard piece to check the weights and strength. This permits an excellent check as some goods may vary from the given weight which may affect the price or finish. Another angle is that weak or "tender" cloth may be caught through testing if the end is a representative sample of the whole bale. If the price permits, a grey inspection of the goods is good insurance to discover defects which may not be visible during the ordinary methods of laying out cloth. This inspection often saves expensive "run-overs" or reprocessing cloth to cover up or eliminate grey cloth defects.

Singeing.

Those goods that require a thorough singeing are run on various types of singers which are often operated at the judgment of the operator, under a foreman's supervision, without any definite means of knowing under exactly what conditions the singer operates. It is a mistake to operate a singer without eliminating as many variables as possible and without installing instruments to measure the temperature, pressure, speed and other similar governing functions of operation. In reference to singers, it is common to have a yardage clock to measure the total number of yards run. This also permits a check on the speed by dividing the total yards run by the elapsed time in minutes. For an accurate speed checking, an indicating speedometer is good practice since it affords the operator an opportunity to know exactly the operating speed. The speed should be varied according to the type of cloth to obtain the most economical operation for a minimum flame. A recording speed indicator should provide a record of the actual speed operation and is a better rate check, but either method removes the element of uncertainty as to the actual speed.

In addition to a speed check, the gas pressure should be measured and recorded if possible. Know-



Jefferson kiers in a southern bleachery.

ing the pressure and speed for a given cloth, the singeing should be uniform except for winter operation when the cloth is apt to be cold. The new singers on the market go even further and have temperature control which makes the ideal method of operation.

Mercerizing.

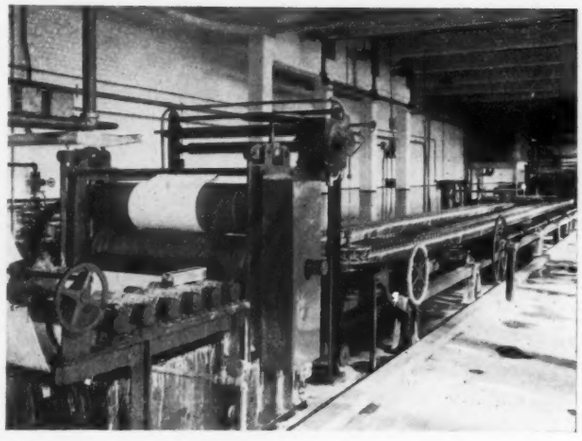
The next step may be considered as mercerizing since the growing tendency is to mercerize in the gray. Sometimes the cloth is de-sized before mercerizing, but here it will be considered as part of bleaching. To mercerize goods properly, the strength of caustic should be carefully maintained to insure uniform results. One method of maintaining the caustic is to have the caustic maintained at a low temperature which necessitates the operation of a refrigeration unit. Today, many plants have eliminated this part of the process to lower costs and the effect is practically the same. The real value of mercerizing is obtained by getting the maximum warp and particularly the filling tension. These values should be measured to get accurate results and although this measurement has been generally neglected, it can be done without great expense and is of prime importance.

The washing of the goods can best be accomplished by recuperators which operate on the counterflow principle. The best type of recuperators have been shown by test to be those which have a larger volume of water than steam in comparison to the first types marketed.

In reference to types, the chainless or curved bar mercerizer has found general favor. This has been an improvement which is showing progress in the development of textile machinery.

Bleaching-Desizing.

The next step—bleaching—is very important as a good bleach or bottom is the foundation of the succeeding operations. The preliminary operation is desizing. This may be done with hot water or enzymes to solubilize the starches and organic matter. This operation may be of a few hours duration to overnight depending on the strength and temperature of the agent used. In order to get proper results the temperature should be maintained between 120 to 140 degrees F., particularly in cold weather, as the active range of fermentation is between these temperatures. The operation of desizing is omitted in some plants due to the class of goods run, and mercerizing is often regarded as a partial de-size but a better bleach is obtained by first removing as much foreign matter as possible and approaching pure cellulose or cotton.

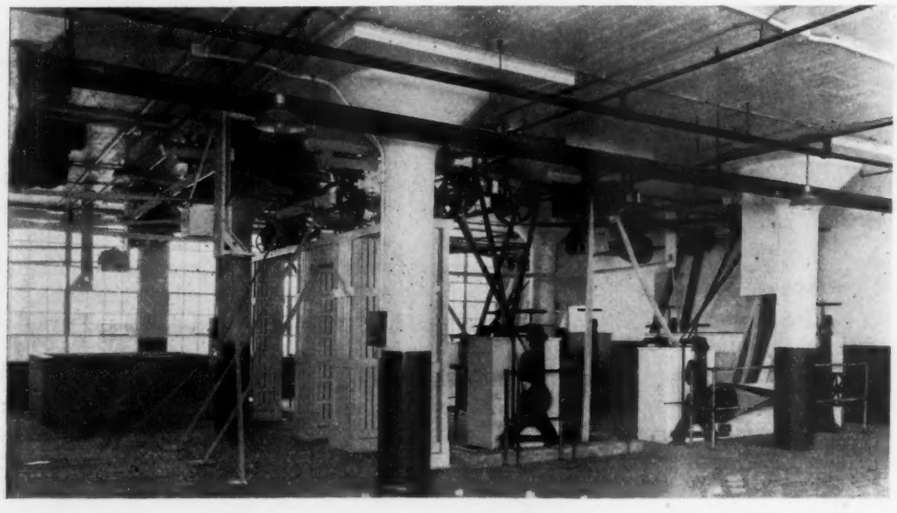


Looking down one end of a mercerizing range.

Bleaching-Kier Boiling.

The next operation is to wash into a kier as the wash removes the soluble starches and organic matter before the goods enter the kier. To get goods into a kier, the best results can be obtained by using an automatic kier piler which is successful on all but the heaviest goods. The heavy goods are hauled or plaited into the kier by hand which permits a greater yardage or poundage per kier than automatic hauling, but it does not allow as free a circulation as the automatic hauler which reduces the labor.

The kier boil may be either a single boil or a double or second boil, but the ingredients used should be as simple as possible and are often caustic and soap. The caustic is assumed to be the waste liquor from the mercerizing frames which is used in the kier at 2 degrees Tw. to 4 degrees Tw. The caustic may need to be built up by the addition of strong caustic depending on the source and more so if from the newer types



Portion of bleach house, showing arrangement of Gantt pilers, allowing goods to come from kier, be washed, go through chemic, sour and white wash, without being handled until piled down in white bins.

of mercerizer which has a highly efficient wash from most of the latest recuperators. The caustic and soap should preferably be mixed together and then introduced into the kiers as a uniform solution rather than to put in some caustic, some more or less solid soap, fill up the kier with water to a standard height and turn on the steam. Kier boiling is too expensive a treatment and requires an excess amount of time in comparison to most processes to permit any "hit or miss" methods.

A kier should be equipped with a recording thermometer to allow each boil to meet a definite set standard of time and temperature. This equipment definitely pays for itself in a very short time and should be installed on every kier even if omitted from all other processes in a finishing plant. The more expensive the process, the more justification there is for the investment to control that operation. There are various types of kiers and methods of boiling on the market, but the choice of type is optional.

Bleaching.

The goods are washed from the kier and then soured or passed through a weak acid bath which is commonly sulphuric acid. The acid should be checked at least every half hour by titration to keep the bath at strength sufficient to insure complete neutralization of the caustic and is called the gray sour.

The goods are then washed and run through chemic which is sodium hypochlorite. This should be checked by titration in a manner similar to the sour solution. The goods are allowed to stand after being run through the chemic and squeezed and before the next wash to allow sufficient time for the oxidation of the colored impurities in the cloth. The oxidation or time necessary to get a good white or "bottom" is often achieved by piling goods in bins. This method is obsolete today for light and medium weight goods as the first end into a bin is the last end out and, therefore, does not permit each yard to have the same time to be acted upon by the chemic. The use of automatic pilers has reduced the labor cost where bins are used, but the continuous piler or chute is the modern method. The automatic piler is understood to mean a method of hauling goods into a bin while the continuous chute is understood to mean a "J" shaped chute from which the cloth is drawn out continuously.

The continuous chute has been a decided factor in reducing the time of bleaching as well as to get a more uniform bleach. A chute requires a smaller space than a set of bins and represents a building saving while the increased production results in goods that have fewer stains than bin stored goods. Many variations of chutes are in use, but the type most favored is the single chute which is used where head room permits.

The next step is an acid treatment to decompose the chemic residue on the cloth. The goods are then washed and squeezed before going into white bins and the bleaching process is considered complete. There are other types of bleaching than the one described, which is the most common, but the equipment is specialized for each type of bleaching. One special type is the peroxide bleach and it is finding general favor.

Drying.

The goods must next be dried and in order to get efficient drying, the cloth should be as dry as possible before going on the cans. This is commonly done by water mangles equipped to open the goods. The cans may be in tandem with the water mangles, although the latter run at much higher speeds. One water mangle is considered equal in capacity to a double string set of cans on heavy goods or a triple string set of cans on light goods. This relation varies as the weight of goods since the water mangle speed is constant for heavy or light cloth, but the cans must run slower for heavy cloth.

Recently the dry cans have been improved in design to permit high speeds. One improvement has been in the bearings being made either ball or roller to reduce the power consumption. Other improvements have been in making lubrication positive and to use seamless copper cans that are much stronger.

The drying of special fabrics sometimes requires the use of equipment other than cans. The loop and travelling tier type dryers find favor for goods to be dried at little or no warp tension.

To operate cans properly, the speed should be variable if different grades of goods are to be dried. A check on the yardage by an indicating rate meter or speedometer is superior to timing a yardage clock. The application is similar to that stated previously for singers. In addition to knowing the rate of drying, the steam pressure supplied to the cans should be checked by an indicating pressure gage.

[This ends Mr. Golrick's first article. The next installment, to appear in an early issue, will start with a preliminary discussion of dyeing, and proceed on through the plant. —The Editor.]

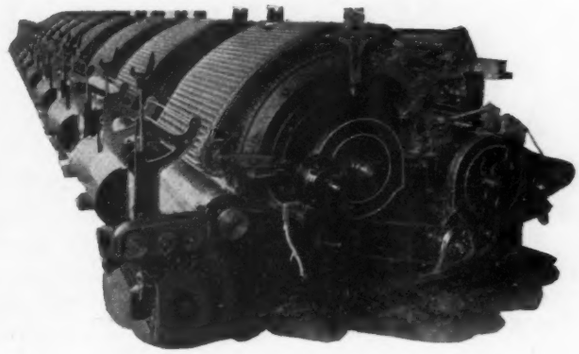
Recent Textile Patents.

According to Paul B. Eaton, patent attorney of Charlotte, N. C., there was recently issued to A. M. Guillet, of the Dixie Spindle and Flyer Company, Charlotte, re-issue patent number 17,665, which covers broadly the improved overhauling system and means therefor which have been developed by Mr. Guillet for the overhauling of rolls and frames in spinning machinery, roving frames, fly frames and the like, and this patent covers broadly the idea of securing wire retaining members at each end of the frame and more preferably in the roll stands thereof and stretching a wire between the ends of the frame in the roll stands to align the roll stands and the frame laterally, vertically and horizontally at one operation.

Also, there was recently issued to Mr. Guillet patent number 1,758,791 on an adjustable flyer grinding device.

In repairing flyers it is well known that additional material is welded onto the tube end of the tube leg of the flyer, this having to be leveled down and ground to a smooth surface. In this patent, means are provided for holding the tube leg of the flyer so it can be revolved completely around the grinding device, to impart to the flyer a smooth grinding operation while the tube leg is held in a fixed position, but is allowed to rotate in that position.

What Happens *to the* Cotton *in the* CARDING Process?



AN OFFICE VISITOR recently brought to our attention an interesting article in the Oldham (England) Chronicle, concerning some experiments at an English mill and Shirley Institute reported by F. Charnley, of the British Cotton Industry Research Association to the Oldham Mill Managers Association.

The accompanying discussion, taken from this report, reveals tests made as to the influence of different numbers of flats in carding, and tells of some interesting developments in the use of an additional licker-in on cards. We feel that many readers will find this of interest.—THE EDITOR.

IT IS GENERALLY BELIEVED in the revolving flat card all the flats are of approximately equal importance in insuring efficient carding and that therefore the greater the number of flats which can be brought into position on the flexibles at any one time the better will be the carded product. Furthermore, there is considerable difference of opinion as to what happens to the cotton after it leaves the licker-in and is delivered to the cylinder and flats via the back plate. The investigations which began several years ago consisted in feeding an ordinary lap into the card and while the card was still running, breaking the lap, piecing a similar lap dyed brown, then after a suitable length of this had been fed into the card, piecing up again the first lap. It was found that approximately 17 seconds after the lap had changed from white to brown at the feed rollers, the sliver changed from white to brown but that the flat strips at the stripping comb still remained white and continued to remain white, not only throughout the delivery of the whole of the brown sliver, but until such time as those flats which were at the back of the card, when the brown lap was fed, had traveled over the cylinder from the rear to the front of the card, an interval of about 20 minutes.

If the cotton passed backwards and forwards between the cylinder and all the flats to an equal extent one would expect to find a deposit of brown cotton on the flats at the front of the card as soon as the brown lap was fed, owing to the high surface speed of the cylinder.

It is well known that the weight of flat strips can be varied by altering the setting of the front stripping plate. This is due to air currents which cause a greater or smaller amount of cotton to be lifted off the cylinder wire on to the flats just as each is leaving the flexibles. It is an interesting fact that owing to this action, a number of flats slightly stained by brown cotton appear about 17 seconds after a length of brown lap is fed into the card. This number of slightly stained strips is equal to the number of almost pure brown strips which are found approximately 20 minutes later at the front of the card and which are delivered by the flats which have been effective in true carding of the brown lap. Similarly, when these brown strips arrive at the front stripping plate they are likewise tinged with white cotton which is blown up from the white lap.

The number of flat strips between the first of these lightly stained brown strips and the first of the brown strips which appear 20 minutes later is equal to the total number of flats (30-40) in working position on the flexibles. Intermediate flats are not stained, and therefore they can have taken little effective action in carding the brown cotton, although they have been in "working position". They did nearly all their work on the white lap when they came on the flexibles. It is not implied that each flat acts absolutely independently of its neighbors, for it is quite possible a lump of cotton or seed may be carried forward over a number of flats at the rear of the card simply on account of its size compared with the close setting of the cylinder and flat wires. Evidence of all these effects has been obtained.

The theory now advanced with regard to the mechanism of the card is as follows: The cotton carried by the licker-in is shot between the cylinder wire and back plate and is first securely held by the flat wire. The few flats which have just arrived on the flexibles will take, temporarily, practically the whole of the cotton delivered by the licker-in, and the cylinder, moving rapidly past the charged flats proceeds to comb (i. e. card) the cotton from them and to carry it forward towards the doffer. The cotton hairs are now

(*Continued on page* 1083.)

Interesting Mill Discussion *and* Reports *at* Texas Meeting

Reported by Robert W. Philip

HERE IS a comprehensive discussion covering a wide range of subjects, reported as it occurred at the annual convention of the Texas Textile Association in Waco last month. The effect of different roll speeds in spinning; causes of end breakage in spinning and weaving; traveler circles and ring flanges; experiences with steel heddles; controlling weights in the picker room; straight wire card clothing; continuous card strippers; one-process picking; effect of different licker-in speeds—these and other currently interesting topics were discussed, and the discussion is reported here.

AN INTERESTING and helpful discussion of mill subjects constituted the program at the 15th annual convention of the Texas Textile Association, which was held at the Hotel Hilton in Waco, Texas, on June 13th and 14th. The discussion covered subjects ranging from the picker room to weaving, and developed a number of interesting ideas as well as indicating practice and conditions of manufacturing in the Texas mills. Since the majority of the mills of the state produce heavy and coarse fabrics—ducks, osnaburgs, etc.—the discussion was based largely upon these classes of goods, though much of it was applicable to other counts. The discussion will be found practically complete in the succeeding paragraphs.

At the annual election of officers, J. R. Compton, superintendent of the Gonzales (Texas) Cotton Mills was elected president; L. R. Manning, superintendent, Waxahachie (Texas) Cotton Mills was re-elected first vice-president, and Ingram Lee, superintendent, Love Field plant, Texas Textile Mills, Dallas, was returned as second vice-president. Dan H. Poole, superintendent, Sherman (Texas) Manufacturing Co., was re-elected secretary - treasurer. Mr. Poole was absent at this meeting, the first he has missed in many a year.

Right, J. R. Compton, of Gonzales, Texas, who was elected president succeeding H. A. Burow, left, of Bonham.

Herbert A. Burow, superintendent, Consolidated Textile Corporation, Bonham, Texas, presided at the meeting as president, and conducted the discusisons. He opened the meeting on Friday evening, with a brief talk on the value of co-operation. Following this, the discussion feature was begun, and was continued through the adjournment of the second session on Saturday morning.

Effects of Different Roll Speeds on Spinning.

The first question discussed called for the effect of roll speed on evenness, end breakage, breaking strength, horse-power consumed, and production. Members had been asked to make not less than four tests on four different speeds on any yarn number.

C. H. Megarity, superintendent, South Texas Cotton Mills, Brenham, Texas, made the first report. "We made this test at Brenham on 7/8-inch, soft staple West Texas bollies, so I suspect you'll hear some thing to write about," said Mr. Megarity. "Our yarn number is 9.85s, and we started with a front roll speed of 140 r.p.m. At this speed, the ends down were 55 per thousand spindles per hour; the breaking strength was 144 pounds, and the production .79 pound per spindle per day.

"Then, with a speed of 155 r.p.m., same yarn number, the ends down were 80, with a breaking strength of 140 pounds and a production of .87 pound per spindle per day.

"We went on up to 172 r.p.m., and the ends down were 100, breaking strength 130 pounds, and production .97 pound per spindle per day." Mr. Megarity said that he retained the same twist, 4.75, and all other conditions except changing the pulley on the end of the frame. Asked which speed gave the best results, he replied that the first test, with a speed of 140 r.p.m.

J. G. Coman, superintendent, Mexia (Texas) Textile Mills, next gave some figures, stating that this test was more or less in conjunction with other experiments. "We used only two speeds, 160 r.p.m. on frames without separators, and 180 r.p.m. with separators. This was on 9.5s yarn, made out of 3/4- to 7/8-inch tinged cotton, on frames with 108 spindles to the side. We used 4½ square root twist, and changed only the roll speed and the travelers.

"On the 160 r. p. m. roll speed, without separators, using a 10/0 traveler, our ends down were 3.32 per side per hour, with a breaking strength of 170 pounds. At a 180 r.p.m. speed, with separators and using a 8½/0 traveler, our ends down were 3.7 per side per hour, with a break of 175 pounds. We found that the speeds made practically no difference."

Herbert A. Burow reported the following test of four different speeds on 21½s warp yarn:

Compilation of Reports as to Causes and Number of End Breakages in Spinning, Submitted to Texas Textile Association

	J. R. Wikle	J. G. Coman No. 1	J. G. Coman No. 2	H. A. Burow	C. H. Megarity	Hugh S. Clarke
Grade of Cotton	Mid. to St. Mid.	S. G. O.	S. G. O.	Mid.	Soft West Tex.	Low Mid.
Staple of Cotton	1" to 1 1/32"	¾" to ⅞"	¾" to ⅞"	15/16"	⅞"	15/16"
Yarn Numbers	32s	9.50	9.50	22.50s	9.80s	9.50s
Size of Ring	1¾"	2¼"	2¼"	1¾"	1⅞" ring	2"
Number of Travelers	5/0-9/10 circle	10/0	8½	No. 1 Victor		11½
Drafts	15	8.64	8.64	7.25	7.3	7.48
Twist Factor	4.65	4.50	4.50	4.75	4.75	4.60
F. R. Speed	115.2	160	180	114	140	170
Single or Double Roving	Double	Single	Single	Single	Single	Single
Hours Run	1 hr.	10 hrs.	5 hrs.	20 hrs.	10 hrs.	50 hrs.
Spindles	960	432	432	1000	228	456
Humidity	65%	74%	65%	55%	65%	45-65%
CAUSE	Ends Down Per Hour Per 1,000 Spindles	Ends Down Per Hour Per 1,000 Spindles	Ends Down Per Hour Per 1,000 Spindles	Ends Down Per Hour Per 1,000 Spindles	Ends Down Per Hour Per 1,000 Spindles	Ends Down Per Hour Per 1,000 Spindles
Unclassified	13	10.8	11.5	2.9	7.4	
Roving Run Out		.69	.92	.9		
Roving Broke Back	1	.23	.46	1.8	1.3	5.7
Bunches in Roving	3		.92	.7	7.4	8.4
Singlings		.46	.46	1.3	2.2	1.1
Roving Run to Outside of Roll		.46		.6	3.1	
Hard Ends	1	1.15		1.4	3.9	3.4
Ends Caused by Hard Ends			.92	1.3		4.4
Roving out of Guide				.2		
Lint in Trumpets	1	.46	.46	.3	4.8	1.7
Steel Roll Lap		.23	.46	1.4	.4	1.1
Top Roll Lap		.46		.6	2.2	1.1
Bad Top Rolls		.92	.46	1.1		.8
Dry Top Rolls		.23				
Flying Lint During Cleaning, Sweeping, Etc.	1	.92	1.38	4.5	1.7	2.2
Top Clearer Waste		1.15		2.2	4.4	2.7
Travelers Off				.6	.4	
Travelers Worn				.2		
Lint on Travelers			1.38	3.7		3.9
Slack Bands		1.15		1.7	.4	
Bands Off	1		.46	4.2	2.6	
Mechanically Bad Spindles, Out of Plumb, Shaky, Etc.		.43		2.2		
Broken by Operator	7	1.38	.46	1.9	2.2	2.6
Broken in Cleaning		2.77		2.0	1.7	2.9
Ends Down at Doff		8.79	13.8	4.2	15.7	11.5
Bad Bobbins		.23		.1	2.6	3.2
TOTAL	29	34.00	34.2	42	64.4	57.7

Roll Speed R. P. M.	Breaking Strength	Ends Down per M. Spindles per Hour	Average Humid.
110	69.3	56.3	53
100	68.6	48.1	54
88	68.8	49.7	54
82	67.5	48.7	55

"We found," said Mr. Burow, "that we got a better result with the 88 r.p.m. speed than with the 110 r.p.m., which we ordinarily are running, but it cut our production down so much that we couldn't stand up under it; in fact, at 110 r.p.m. we are running as slow as we can and still keep up. We got a better break at 110 r.p.m., but had more ends down." Replying to a question as to how many ends were broken in the test, Mr. McBride, the overseer of spinning at Bonham, reported that there were 64 ends broken on each test; he added that the yarns were all run on the same frame, from the same roving, changing only the travelers and the pulleys.

Mr. Burow stated that they could not determine the difference in horse-power used, because they use group drive on these frames. Hugh S. Clarke, superintendent, Texas Textile Mills, Waco, pointed out that the horse-power consumed varies with the load, in direct proportion to the speed.

Tests on End Breakages in Spinning.

For several meetings, the association has been asking for reports of tests on end breakage in spinning, with causes, and the second discussion of Friday evening was based upon several reports on this subject which were submitted by several members. A compilation of the results of these tests will be found in the table appearing on this page.

There were several points brought out in connection with these reports. J. R. Wikle, manager, Magnolia Cotton Mills, Magnolia, Ark., who reported a draft of 15, explained that he accomplishes this by means of an unweighted middle roll. He said that he had previously noted that his percentage of ends broken by operators was comparatively high, and stated that he could not understand this unless it was due to the system of drafting explained. Ingram Lee of Dallas, pointed out that he had found this

Left to right: O. B. Haney, Waco Twine Mills; Percy J. Long, Consolidated Textile Corporation, Bonham; J. O. Wilson, supt., Guadalupe Valley Cotton Mills, Cuero; J. R. Compton, supt., Gonzales Cotton Mills, Gonzales; C. E. Elrod, Dallas Cotton Mills; M. B. Hutchison, Sherman Mfg. Co.; J. G. Coman, supt., Mexia Textile Mills; and H. A. Burow, Consolidated Corp., Bonham.

point to be one of the few disadvantages of the self-weighted roll; that when the operator puts in the roving it seems to make a thin place and break down right there. He said they had tried twisting the roving in, but that the same effect resulted, especially if a little long end is left on in putting in the roving.

Referring to his percentage of ends broken back, Hugh S. Clarke explained that he had found quite a number of these caused from stacked-up roving falling down from the top of the creels.

A number of those reporting indicated that their percentage of end breakage according to this year's test was considerably lower than the figures produced last year, showing progress in the way of eliminating the effect of this difficulty.

"We find that our biggest trouble is in the number of ends down in cleaning off, and those caused by flying lint," commented Mr. Burow in connection with his test. He asked for suggestions from the members as to means of reducing this evil. Several men pointed out that Mr. Burow's yarn (22½s) was considerably finer than the average of 8s or 9s, being made in the other mills represented, and that naturally the roving is finer, which would result in lint breaking it down much quicker than the rovings used on the coarser numbers. Mr. Wikle, on still finer numbers, reported it as his practice to blow off the warp frames once a week, with compressed air, and cleaning the filling frames off once every day. Mr. Burow, responding to a question, stated that he uses sweeping brooms for cleaning the spinning room, and Mr. Wikle recommended the type which is pushed along by the sweeper, in order not to stir up so much lint.

"We use compressed air," said Mr. Coman of Mexia, "and blow off the rails about every two hours, on our low grade cotton."

"And even that is hardly often enough on this stuff," commented Mr. Megarity.

"Another place we have been working on is on our bands off," reported Mr. Burow. "I checked up on this and found that we were not making our bands according to the standard generally used, and so we changed. I think we were making them out of short cotton, and we started to making them out of speeder roving from good cotton, making 120 bands to the pound."

Ben Edney of Belton, asked how long Mr. Burow's bands run. He replied that he does not know, as he is just in the process of changing over on his bands, but that on 16,500 spindles, they are tying on 250 a day, including some of the old bands. Mr. Wikle commented here that on 6,000 spindles, tape-driven, he sews on only four tapes a day.

J. O. Wilson, superintendent, Guadulupe Valley Cotton Mills, Cuero, Texas, reported that he uses a 8.50s yarn doubled on the twister for his bands. This brought up the comparative merits of bands made from yarn versus roving bands, and a vote indicated that among those present the practice seems about equally divided between yarn and roving bands.

Preferring the roving bands, Mr. Burow said that, "I find that the yarn bands, when they get slack, won't come off, but a roving band, when it gets to the point where it is playing out on you, will come off." He continued by saying that while investigating the band question, "my good friend Peter Quinn came along and gave me some instructions as to making bands, which I have followed. The instructions he gave me were to make a speeder roving, with seven turns per inch, 1.00-hank roving, 120 bands to the pound. We have been following that, and I think they are running better than the ones we used to have. These instructions, and the fact that we are making the bands out of good cotton, have helped us.

Traveler Circle and Ring Flanges.

"What circle of traveler do you use, and why? Also give number of flange ring used." This was the next question submitted.

In discussing it, J. G. Coman of Mexia, said he had gotten into trouble in connection with traveler circles. "We found a man who had a set of traveler gauges," he said, "and we used them and checked some of our travelers, and found quite a variation in them. You probably remember in our end breakage test that we showed a good many ends down without causes, and last year we had a still larger number. Our fixer tells me our travelers were giving us most of this trouble, and when this fellow came around we borrowed his traveler gauges, and checked up on the travelers, and we found that they were not uniform, that the circles were not uniform, even in the same box. We would find 3 and 4 and 6 circle, according to the gauge we were using. So we ordered some special travelers. We were supposed

to be using a 3 circle, No. 2 flange, and the ones we had showed from 3 to 5 circle."

Mr. Coman said then he wrote to a tool maker ordering a set of traveler gauges, but that the order was referred to a traveler manufacturer who wrote back saying that the only gauges they knew of were the ones used in their own shop. He read a letter from another traveler manufacturer who stated that one of the unfortunate things of the traveler business is that every manufacturer has his own method of designating the style, and each has his own standard circles, which may or may not correspond with those of another manufacturer. This company, too, indicated that their only gauges were those used in their own plant.

Even so, Mr. Coman indicated, the fact remained that according to the gauges he used there was still a great variation between the travelers in the same box from the same manufacturer. One of the mill men present stated that he had a full set of traveler gauges which he would be glad to loan for the purpose of duplicating. Hugh S. Clarke suggested the possibility of his determining the cost at a local shop, for turning these out, and advising any of those present who might be interested in securing a set. The man with the gauges, however, said that since his mill has been running he has not used the gauges as he finds the travelers to run pretty well to the standard.

Mr. Coman explained that one of his problems was that, "we were getting travelers that were not uniform, we found that the horns were not parallel. That would throw them out of balance. And we found that some were thinner than others, they would weigh the same, but that they would be of a larger circle."

At this point, J. T. Mooney, overseer of spinning, Waxahachie Cotton Mills, said that experiments had shown him that on a 10/0 traveler, he had found that to use travelers made for a No. 1 flange ring on a No. 2 flange, made the work run better, on old rings. He did not know why this was unless it was that the traveler on the old ring seemed to "hug" the ring closer.

Brief inquiry here indicated that it is a practice to change travelers, on yarns ranging from 8s to 12s, every week night and day, and in some cases every week on one shift. Mr. Wilson said he changes every two weeks, but that since running on a short-time week he finds it necessary to change them more often.

In connection with this discussion, J. R. Wikle passed along some information he had received concerning the derivation of the terms No. 1 and No. 2 in connection with ring sizes. He explained that a ring manufacturer had told him that for every 1/32-inch over 3/32-inch that a ring measures, a digit is given in the numbering. That is, if a ring is 1/8-inch, that is 4/32-inch, which is 1/32 larger than 3/32, making it a No. 1 flange. If a ring measures 5/32-inch, that is 2/32nds over 3/32nds, making that a No. 2 flange, and so on.

Tests on Causes of Loom Stops.

The chairman next asked for reports on causes of loom stoppage. Members had been requested to determine the stops per loom per hour on not less than ten looms, and to list the cause for each stop.

D. B. Booth, overseer of weaving, Mexia Textile Mills, was the first to report. He reported a ten-hour test on four 10-loom sets, or a total of 40 looms, making a total of 400 loom hours. During this time he found the following stops and causes:

Warp Breaks: Unknown, 128; knots, 21; gouts, 28; draw-backs, 14. *Filling Breaks*: At change, 103; while running, 107; filling running out, 105; loom out of fix, 48. This made a total of 554 breaks for the 400 loom hours, or an average of 1.385 stops per loom per hour.

The looms in this test were about equally distributed on 29-inch, 8-ounce A grade duck, made from Strict Low Middling, 7/8-inch white cotton, and 29-inch, 8-ounce B grade duck, made from Strict Good Ordinary 7/8-inch to 13/16-inch tinged cotton. Braking down the stops according to the two grades, Mr. Booth found that the A grade duck had an average of .95 stop per loom per hour, while the B grade averaged 1.6 stops per loom per hour.

Hugh S. Clarke next reported on the loom stoppage test at the Waco plant of the Texas Textile Mills. This test was run for 10 hours on 20 looms on 2.30-yard denim. The stops per loom per hour figured .644, with the following causes and stops per loom per hour in each case: Stops on change, .096; stop-off, .009; slam-off, .002, broken filling, .036; broken warp, .131; gouts in filling, .105; gouts in warp, .151; loom out of fix, .013; bad harness, .019; warp kinks and knots, .081.

C. H. Megarity reported a test on osnaburgs which figured out 1 stop per loom per hour. His test was made on ten looms for ten hours, with the fol-

Left to right: R. L. Smith, of Houston; B. F. Barnes, Jr., of Atlanta, Ga.; W. C. Bowden, Texas Textile Mills; W. F. Smith, Mexia Textile Mills; Hugh S. Clarke, supt., Texas Textile Mills, Waco; Ingram Lee, supt., Texas Textile Mills, Dallas; J. R. Wikle, manager, Magnolia, Ark., Cotton Mills, and W. S. Gantt, of the Magnolia Cotton Mills.

Left to right: J. A. Bishop; Claude Mast, supt., Itasca Cotton Mfg. Co., Itasca; G. E. Wilig, Worth Mills, Fort Worth; J. C. Colvin; J. B. Braley; Bon Samples; C. R. Lewis; and L. B. McBride, of Consolidated Textile Corp., Bonham.

lowing causes and the number of breaks from each in the 100 loom hours: Broken warp, slip knot, 8; filling breaking on transfer, 17; loom out of fix, 4; pick-out, 1; bad bunches on filling, 19; gout in warp, 10; loose end, 4; gouts in filling 15; weak place in warp, 18; draw-backs, 4—a total of 100 breaks for the 100 loom hours.

The next report was made by H. A. Burow, of Bonham. It covered a test of 40 hours on 16 looms, shuttle-changing type, on 4.00-yard goods. The test showed an average of 1.14 stops per loom per hour. The total number of stops from each cause, for 40 hours on 16 looms, was 733, divided as follows: Kinks, 38; knots, 90; gouts, 110; loose ends, 61; slam-offs, 4; stop-offs, 7; loom out of fix, 10; stops on change, 9; loose cotton, 1; motes, 24; broken ends, 285; broken harness eyes, 94. Mr. Burow explained that at the time of the test he had run short of harness, and had reclaimed some that had been used, and that four of the looms in the test set were running with this old harness which caused excessive stops due to harness eyes breaking.

A question from the chairman developed the fact that practically all of those present use the weaver's knotter on spoolers. The chairman asked if any of the men had experienced difficulty with the knotter tying a long and short end, causing slip knots. A number reported this difficulty at various times. Several of the men pointed out that when first installing the weaver's knotter, the production of the spooler hands was cut considerably, but after they had "gotten the swing" of the new type of knotter, they were much better pleased than originally, and that a better knot was produced.

"I think all of us have had our production cut down in installing the weaver's knotter," said Ingram Lee. "When we first went onto them our production was cut. Where our best spoolers had been doing 40 boxes a day they were cut down to where they would do not over 15, and we ran off all of our good spoolers, but now that they have learned how to use them, we would not go to anything else. We get a much better knot and the girls are better satisfied." He indicated that the supplies on this type of knotter were not excessively high.

Mr. Mooney reported that when they began putting the weaver's knotters in, they trained one girl on them who in turn instructed the other operators. He agreed with one or two others who spoke indicating that the knotters required especial care, stating that they have one man who looks after them, and that this man keeps them in adjustment, and dips them in a light oil and hangs them up. They mark their spools, so if any defective knots come through, they trace back to the girl and knotter and adjust the latter to correct the trouble. Hugh S. Clarke stated that they dip their knotters in spindle oil. Mr. Lee reported that unless the knots are lifted out of the knotter carefully, kinks will result. Mr. Edney said they had been using the weaver's knotter for two or three years, and that it is very successful on yarns for the hosiery trade. W. C. Bowden and others emphasized the importance of keeping the knotters in proper adjustment.

Experiences with Steel Heddles.

The next question asked men with experience on steel heddles to report on their use.

"We have been using them ever since we started up our mill about 2½ years ago," said J. R. Wikle. "When I was at a mill over in North Carolina we ran them for three years, and experienced no trouble at all. The weavers did not like them at first, but after they got used to them, they soon found that it is much easier for them to find an end, especially on high sley goods such as we are running. The steel heddle also eliminates a good many seconds from skips and over-shots. When you tie an end in on cotton harness, you are liable to tie it in high or low, but on steel heddles you cannot do this. I do not know how long the steel heddles will last. At the mill in North Carolina we had some sets that had been running for over six years night and day."

Hugh S. Clarke said they had gone into the steel heddle question at the McKinney plant a couple of years ago, and had worked out with the manufacturers a frame and heddles light enough for a spring top to handle and lift quickly. He said at the Waco plant they had not gone into steel heddles on account of using the drawing-in machine.

"There has recently been brought out what they call a staggered bar steel heddle," said Mr. Wikle, "in which one bar is about 15/16-in. lower than the other. The theory is the same as the one used on staggered cams, so that only one-half as many warp ends pass each other at one time; therefore, on 100 sley we have the same effect as on a 50 sley. We put about 25 per cent of our looms on this staggered bar and we like it much better, and I think the loom stops are lower."

"We have had steel heddles for three years in

continuous service," said Ingram Lee of Dallas. "Where you have to change constructions so much, as we do, you are handicapped, but if we were on a few classes of goods, we would use the steel heddle altogether. We have never replaced a frame or bought any new eyes. We have both tying-in and drawing-in machines. When we can, we put the harness in by patterns and use them on the tying-in machine. I believe it would be a great change if some way could be developed to use the steel heddles on the drawing-in machine.

"As Mr. Wikle has said, there is no such thing as a high harness eye, or a broken harness eye, on the steel heddles, and on the higher sleys it is much easier to get in to see an end."

Mr. Wikle told of an idea he had seen in an Atlanta mill recently, where they spray the heddles and bars, with an atomizer, with a light oil, which he said gives the bars just enough lubrication so that the heddles slide freely.

"Another advantage," said Mr. Lee, rising again, "is that when a loom fixer ties in a warp on twine harness, if he doesn't space it right, he will have too many threads on one side of the separating bar, but on the steel harness all that is necessary is to loosen the clamp and adjust it readily."

A member reported that he has some mail-eye harness which has been in use for five years.

Grover C. Dilling, superintendent, Brazos Valley Cotton Mills, West, Texas, said he had been using steel harness for seven years, and that he would not think of doing anything else.

J. G. Coman reported his experience with steel heddles, which he has been using for four years. He said he had had his ups and downs with them, but that now he is satisfied. At first, he said, he found the wood used in the frames unsatisfactory, and had substituted ash and hickory instead of white pine, and that he had replaced hooks with the brace in the center. His supply cost for the past three years, he said, including all of this change-over, was $1.27 per loom per year. He said he had found it necessary to keep them well oiled, and that he uses a lard oil for this purpose. Mr. Dilling reported that before using steel heddles, he had to replace his harness, on 16-ounce duck, about every 100,000 yards.

In answer to a question, Mr. Wikle brought out that the original cost of steel heddles is approximately twice that of plain cable twine. L. R. Manning, superintendent, Waxahachie (Texas) Cotton Mills, reported that, "we have 72 sets of steel heddles running for three years, and the total cost has been $10.00 a year for supplies. We have the rest of our looms on mail-eye harness which has been running about 3½ years." He draws the mail-eye on the machine, and the steel heddles by hand. In this connection, Ingram Lee pointed out that he had found that on complicated work, a woman could draw two warps of 3,200 ends a day, but that a machine, although the operating expense was higher, could handle enough more to make the cost per warp approximately the same.

Mr. Wikle asked, "while we are on this subject, how long will a *reed* last, barring mechanical injury?" No one present had this information. Mr. Coman said his have been running five years, but that he does not know how much longer they will run.

There was a brief discussion here as to the use of the labor extension system.

The concluding question of the Friday evening session was, "What improvements have you made at your mill during the past year?"

Mr. Coman reported that, "we found that our warp bobbins were beginning to wear to a point where they would be low on spindles. We couldn't get our bobbins even at the top. We took up the matter with a bobbin concern, and sent them some bobbins, which they completely enclosed at the bottom in a brass bushing at a cost of $15.00 a thousand. We have since sent them about 8,000 bobbins to be re-worked, and by doing this we have eliminated a lot of broken ends and soft yarn due to the bobbins slipping. We thought the bobbins would be worn at the top where the spindle touches, but they were not worn enough there to hurt, and I do not believe we had to reject a single one of the re-worked bobbins. We just go through our bobbins and pick out the ones that are low on the spindle, and send them to be re-worked. Then we use the bobbins with the bushings separately from the others."

One-Process Picking.

A continuation of this discussion started the second session of the convention, which was opened on Saturday morning. J. O. Wilson, superintendent, Gaudalupe Valley Cotton Mills, Cuero, was asked to report on his installation of one-process picking.

Mr. Wilson said that, "we have installed a one-process picker and are very well pleased with it. We eliminated two men in the picker room; we had three,

Left to right: J. H. Smith; Virgil Compton; L. R. Manning, supt., Waxahachie Cotton Mills, Waxahachie; J. H. Smith; D. B. Booth, of Mexia; W. R. Burris; W. L. Marks; and J. T. Mooney, of Waxahachie Cotton Mills, Waxahachie.

and now one man does what was done by them, and does it easier. We have the electrical control. The picker puts through 200 47½-pound laps a day, and the laps are very uniform."

Along the line of improvements, Mr. Elrod, overseer of weaving, Dallas Cotton Mills, said they had gotten mighty good results by the installation of an automatically controlled humidifying system.

"We have made some changes at Bonham which may interest you," reported Mr. Burow. "One that seems to have helped us a lot was the installation of new warper combs, which give us lot better beams than the old-style comb. They hold the yarn on the beam so much better, and keep the threads from piling up and falling over. This new comb practically eliminates slack ends on the slashers, and I think they will pay for themselves in a short time in the saving in waste at the back of the slasher. The teeth in it are staggered and hold the yarn in one place, whereas the old combs have flat teeth and enough room for half a dozen ends."

"A ROSE BETWEEN TWO THORNS"

Mrs. H. A. Burow with Guy L. Morrison, left, of Spartanburg, and P. G. Weir, right, of Dallas, representatives of Penick & Ford.

"Has anybody tried using three immersion rolls in size boxes?" asked Mr. Coman. Mr. Wikle said he had a letter from his brother, connected with an eastern mill, stating they were trying it out.

"We have been using the idea for about a year," reported Mr. Coman. "We made them out of 2-inch pipe, putting three rolls which revolve in the same space the one roll was in. I think we found an advantage in that we are getting from one to two per cent more size in the warp than with the plain one roll."

Asked as to what improvements he had made, Claude Mast, superintendent, Itasca (Texas) Cotton Mfg. Co., said he had taken all of the motors down, and, using a spray gun, had painted the windings. He said he felt that this had prevented trouble on some bearings which "might have gone" within a month or so.

"We had some motors that got hot," reported Mr. Wikle in this connection, "and we took them down and cleaned out all of the cotton. We were accustomed to blowing them out every week, but found we were not getting it all out. We are going to make it a rule to clean the motors throughout the mill at least once a year. We got this idea from an article in COTTON." (This article appeared on page 1115 of the August, 1929, issue of COTTON." Copies of it will be sent to those requesting them.—The Editor.)

Mr. Burow said they had adopted a similar system about three years ago; that "you are fooling yourself if you only blow them out every week or so, because the ventilating space gets clogged up and you cannot clean them thoroughly simply by blowing them out."

J. G. Coman here presented an inquiry as to starch. He said, "we are using a mixture of 2/3rds thin boiling, and 1/3rd Pearl starch. We have tried out practically every starch mixture, and have not found one that gives us as good running work as this." He asked whether it was practical in the other men's opinion to use such a mixture.

At this point, Guy L. Morrison, southern representative of Penick & Ford, Ltd., who was a visitor, was called upon, and discussed briefly the use of starch. He discussed the solubility of starches, explaining the method used in breaking up the starch granules. With regard to Mr. Coman's mixture, he said they had conducted no experiments with such a combination of Pearl and thin boiling.

Giving his reasons for using this mixture, Mr. Coman said, "we use the thin boiling starch to get penetration into the yarn. You can get the starch on the inside of the yarn and still not have the fibers well stuck down, so for that reason we get the penetration from the thin boiling starch and use the thick boiling to hold the fibers down on the outside. We are convinced that we are getting more uniform sizing and a better sizing."

Continuing the discussion of improvements, Mr. Coman said that among other things they had done was to speed up the spinning 20 r.p.m, using separators. "We have also extended the compressed air all over the mill, which helps keep our machinery cleaner, and we have painted all of our piping, shafting, etc., with aluminum paint, and that makes the rooms lighter and reduces the time we have to use electric lights, cutting down on our coal bill.

The next asked, "Why is it necessary for doffers to be allowed to be idle so much of the time? Would it be possible to have our spinning done by combination doffers and spinners, who would do both the spinning and doffing?

Controlling Weights in Picker Rooms.

The discussion developed that the idea of combination doffers-spinners would not be practical. A number, however, indicated that between doffs, they have the doffers assist in such jobs as changing travelers, sewing on tapes, laying up yarn on the spoolers, etc. As to what might be done along this line, it was considered that the size of the mill, the number of the yarn, the number of different yarns, and other local conditions determined it. There were several who expressed the belief that, in coarse yarn rooms, the doffers' time is practically occupied by the actual doffing itself, and that this is such a high-speed operation, that rest periods between doffs are deserved and necessary.

'What are we doing toward controlling yarn

weights by controlling or making allowance for humidity in the picker room?" was the next question. "We have small three-ounce weights for our picker lap scales," said Mr. Wikle, "and each weight takes care of a five per cent change in the humidity or regain. We read the hygrometer every hour and add or take off these weights to allow for the changes in moisture content in the lap. The picker hand doesn't have to worry about it. Our card grinder, who also has charge of the pickers, does that. We go still further than that, we have a certain standard for each five per cent variation in the drawing sliver, which we weigh and correct twice a day. We never change any gears on spinning." Mr. Wikle said he allows one-half pound variation each way from standard on his picker laps.

J. O. Wilson said their pickers are located in a frame building, enclosed largely in glass, and that he has found the use of humidity in the picker room a salvation, especially when "dry Texas Northers" hit him. He said they have three humidifier heads in front of their one process picker, having changed them to this point from over the back hoppers on the old process.

O. B. Haney of the Waco Twine Mills asked if it is necessary to control for humidity when using the oil spray. C. H. Megarity replied that, in using the oil spray, the humidity affects the cotton just the same.

A member asked if anyone present was using the regain indicator method of controlling picker lap weights, but no one indicated the use of this system. There was a brief discussion here pointing out the importance and value of automatic control in connection with humidifiers, in keeping the humidity at a constant point all of the time.

Straight Wire Clothing and Card Stripping.

The next question asked for discussion of improved methods of card stripping, and straight wire clothing on the cards. C. H. Megarity, of the South Texas Cotton Mills, said he is experimenting with straight wire, and that on low-grade cotton, he strips them every third day, grinding them about half as often as the regular wire, and that he is very well pleased with the results. He has had two cards so equipped for about six months.

Claude Mast said he has one card with straight wire, and that whereas he strips the regular clothing three times a day, he strips the straight wire, on low-grade stock, every other day. "We like the looks of the web very much," he said.

While he was not trying any straight wire, Mr. Wikle said that "we strip four times a day, with a vacuum stripper, putting on the belt and throwing the lever both ways. We have found it satisfactory to save our cylinder and doffer strips, in using this method, selling our flat strips. The waste from the stripper is clean by the time it gets to the bins, and I have found by stapling it that it is just as good as what we are running."

The next discussion referred to the new continuous card stripper. Mr. Megarity said he has one installed, and from what he has seen of it he likes it mighty well. "We strip every time we grind now, which is every 17 days, on low-grade cotton," he said. "I do not get any more strips, but get twice as much flyings."

Reverting to the straight wire, Mr. Mast said that he had run a test on one card, and that in a 24-hour test, the strips from the regular wire were 1½ pounds, and on the straight wire, 2½. The flyings on the regular wire were 19 pounds, and 22 pounds on the straight wire. He said the bulkiness of the sliver was the same. Here Mr. Burow read a few figures from a comparative test between regular and straight wire. This test will be found complete on page 913 of the June issue of COTTON.

Mr. Burow asked whether the men found they have more droppings from cotton this year than last. It was unanimous opinion that this is true. Mr. Burow said, "Ours have increased at least fifty per cent. One thing we might attribute it to is that there is a lot of short staple in the cotton. We used to clean out under the cards once a day, but now we clean more often, otherwise by noon they would be so filled up that they would close up the licker-in screen and we would get no cleaning."

At this point Max Hogg of the Dallas Cotton Mills pointed out that for the past few years the quality of the cotton has been deteriorating, as well as having more mixed and uneven staple in it, and urged upon the mills to encourage farmers to grow better staple lengths; pointing out that this will be secured only when the farmer himself receives more money for good staple than for "half-and-half."

Effect of Different Licker-in Speeds.

"What effect would speeding up the licker-in on cards have on the staple of cotton, and would you get any cleaner work by this change?" was the next question.

Hugh S. Clarke reported a test on two different licker-in speeds, the test running for 80 hours. He ran a test at 434 r.p.m. and one at 507 r.p.m. At the slow speed, he said the flyings were 4.88 in ten hours, and on the high speed, 6.12. He said at the higher speed the web was noticeably cleaner, but beyond that he saw no difference except the amount of fly. There was no long staple in the fly at the higher speed, he said.

W. F. Smith, of the Mexia Textile Mills, reported on a test at 446 r.p.m., 492 r.p.m., and 534 r.p.m. At the lowest speed, the droppings were 27½ pounds, at 492 they were 25½ and at 534 they were 27½ pounds. The strips did not vary at the different speeds. The test was run for 44 hours, and during this time the cylinder strips were: 446 r.p.m., 6.34 pounds; 492 r.p.m., 5½ pounds; 534 r.p.m., 5½ pounds. Flyings and motes were: 446 r.p.m., 21 pounds; 492 r.p.m., 19½ pounds; 534 r.p.m., 26¾ pounds As to breaking strength, he said they got several pounds better break at the highest licker-in speed, and that they are changing more of their cards over to it.

"Four years ago we changed by increasing from

(*Continued on page* 1071.)

We Know the Facts---*but We Must Tell the Public*

THE AUTHOR says, in submitting this article, that the criticisms in it are not made in a spirit of "I-told-you-so," but rather to stress the point in question. You will be interested in reading his article, which is presented for your consideration as his views in the matter. That much needs to be done by many mills is not denied, and this man gives some rather concrete suggestions on how improvement may be secured by those whose conditions are not up to par.—The Editor.

A CRITICAL ATTITUDE will be assumed by the author in this, the sixth article of the series, "Putting the Textile House in Order." Critical as it may seem, it is hoped by the writer that his motive be not misunderstood and the reader will realize that behind the apparent onslaught is a sincere appreciation of the splendid accomplishments of southern textile leaders, an utmost confidence in their abilities and a fervent prayer that success will reward their noble efforts to restore the crippled industry.

Some one has recently stated that the mill owners are in dire need of a Moses to lead them out of their difficulties. Within the past year there have appeared upon the scene many a self-designated Moses, who, according to their impractical claims, can furnish a panacea for all industrial and economic evils.

The following excerpts are from a speech delivered before the members of the Southern Textile Association in 1925. The speaker tried in vain to arouse interest in the problems of refuting and neutralizing the hostile and unjust criticisms directed at the textile industry.

"You, no doubt, are familiar with some of the sensational articles which have appeared in many of our popular periodicals.

"The past policy, generally accepted, has been to ignore such outbursts. In other words, 'Do not bite the dog.' 'Tis true as far as it goes, but if a dog is mad, let's prevent him from passing his madness on to others; let's use a neutralizing hypodermic, correct and control the disease. It has been said that our nominal uplifters have built their complexes upon a foundation of truths, half truths and lies. Unfortunately there are many truths about us, of which we are not proud, and which offer just grounds for criticism. These coupled with untruths make good reading matter for a sensation-loving public. One of our ancient seers has said, 'There are three kinds of lies: plain lies, damn lies and statistics.' The more I think of the statement the more significance I see in the climatic arrangement. First, the 'plain lie,' which unconsciously carries exaggeration, an inherent trait we all more or less possess; the 'damn lie,' a malicious misrepresentation for ulterior purposes, and the most dangerous of all, the 'statistics.' The 'plain lie,' we discount. The 'damn lie' is generally proved wrong in its incipiency. But the 'statistics' furnish the real live bait with which the fish are caught.

"Our moral and industrial reformers dote on their carefully prepared statistics books, a more formidable possession than Tannenbaum's hallucination, the 'Doomsday book' with which, we are told, we outline the destinies of our 'oppressed mill people.' Anna Howard Shaw once told a story of how, through shrewd compilation of statistics, she proved a certain issue governing the policies of a town, and after a lapse of a few years, found it necessary to take the opposite side of the same issue, and by statistics conclusively carried her point.

"So it is with the usual investigator and uplifter sent out by organizations, institutions and publishers. With pencil and paper, and a definite purpose, they enter the 'feudal reservation of the heartless mill owner' to collect statistics and write the story from first hand information. They are fully aware of the necessity of compiling and relating of those conditions depicting the need of a great reformation. Even more essential is it to his work than the paper he writes on, for a substitute might be found for the paper, while many instances can be cited of articles having been abandoned or refused because the adverse pictures were not painted. One prominent publisher refused a certain article on the grounds that it was 'too superlative' and appeared too much like the defense of a retained lawyer, yet only a few months previous a most superlative and extremely antagonistic article, teeming with maliciousness and biased criticism, appeared between the covers of his periodical.

"It is far from my desire to leave with you the impression that all of our investigators, uplifters and critics are hostile. There are some possessing the 'best of intentions and a sincere desire to find out the truth, but in absence of the least familiarity with local conditions, they have insensibly slipped into error—honest error, no doubt, but none the less damaging to the South,' and for which we ourselves are greatly responsible. We have passively discussed and probably cussed the various criticisms and have allowed them to pass from our minds, feeling that any further attention would suffice nothing.

"Many feel that answers or replies to the many charges would only react favorably to the attacker,

in that we would furnish free advertising for him by bringing them to the attention of those who would otherwise not be aware of their existence. I find I must take issue with this sentiment. First, there is little likelihood of any criticism of the industry escaping the attention of those desiring to use same, and you can further rest assured that they themselves will give it the proper advertising; secondly, I might agree with the idea if we were really trying to hide something, if it were necessary to keep the public blind to our activities. But, this is not the case, and unless we are willing to call the hand of those who, either through ignorance, selfishness or maliciousness, try to picture a 'colored gentleman in the lumber yard' we will engender the suspicion of the entire public.

Sixth of a Series of Articles on

PUTTING the TEXTILE HOUSE in ORDER

By Michael Welsh

"Each of these criticisms and condemnations has incremented a movement which is growing not only in the sections from which the majority of our uplifters come, but also in our very midst; in the very states whose prosperity and growth have been not only augmented by, but have been dependent upon the mill industry, our southern colleges and universities have interested themselves in 'The Mill Village Complex.' The faculties are presenting the ideas of such treatises and articles as are available. Discussions follow. From information available and from their theoretical discussions taking place, conclusions are arrived at and opinions are moulded. Could we expect favorable conclusions and unbiased opinions, when the professional mind is entirely dependent for enlightenment upon such information and statistics as Frank Tannenbaum and his associates see fit to give? Their dissertations and expositions are convincing, first, in that they are always well written, are polished and are appealing; and thirdly, they are permeated with the most convincing statistics to make them authentic. What could be more influential with the impractical and inexperienced mind than such unrefuted exposition? In a way I can compare it with the apparent candy which turns out to be a sugar coated laxative or pill, and although pleasant to the sense of taste is rather violent and sickening in its final action.

"Only a short time ago, in a speech, the vice-president of one of our greatest southern institutions of learning, called particular attention to the deplorable situation existing in his beloved state, in that the textile industry was a detrimental factor in its retarding influence upon cultural civilization. His ideas and descriptions were concurrent with those of many of our most radical and antagonistic critics. Yet, I do not believe that a more broad-minded or conscientious man fills a similar position. He, from his speech, is thoroughly convinced that the textile industry and its systems of organization and control are in entire discord with culture and civilization; therefore are detrimental to the commonwealth. He will feel it his duty to exert his influence in correcting the great evil. The 'textile complex' must be solved. These people are only aware of the dollars and cents the cotton manufacturer has derived from his investment, his ability and his patience. They cannot connect good roads, modern schools, colleges, music, art or the growing culture of their state with the lint-filled cotton mill and its 'feudal villages.' You people have seen a wonderful transition, you are fully aware of the cultural influence the mill village has exerted upon the inhabitants, and you should realize that the social welfare systems, coupled with the liberal policies of the managements, have brought about a development unparalleled for the same period of time. You are conscious of all this, but, gentlemen, let me emphasize, *the public is not.*

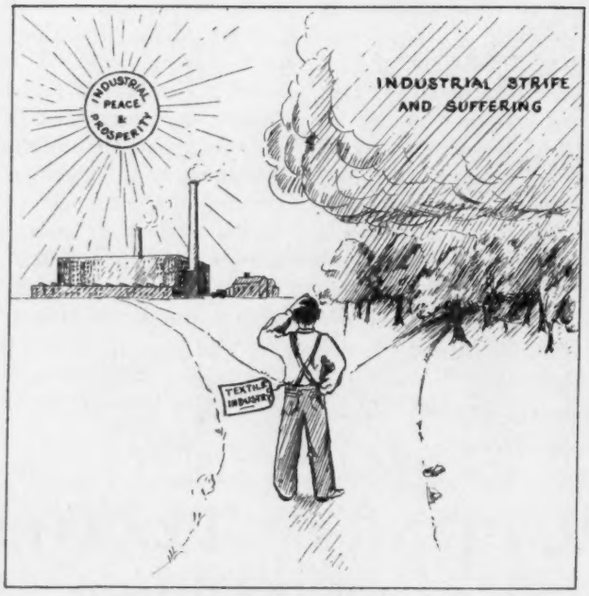
"In the days when the textile industry was struggling for existence, no colleges, no institutions and no organizations offered assistance. It was the mill problem then. Many laughed up their sleeves at a people attempting to develop an industry contrary to all business laws and economic principles. The industry has passed the experimental state, and has been proclaimed a success. Little attention is now paid to the important role such practices as paternalism have played in the achievement. The early history is forgotten, and, we now behold new characters, unsolicited agents, appearing upon the scene ready to direct the show according to their hypothetical and extremely theoretical ideas. A change of the purport; the cast and the scenery is demanded.

"With many it is for selfish and pecuniary gain, with others it is to give vent to an insatiable desire to be a reformer, to alleviate suffering humanity; and then there are those who are really striving for a good, practical, rational understanding. Men and women, as much opposed to radicalism as we ourselves are. With them we must co-operate. We must see that they are no longer forced to rely alone upon the arguments and statistics of our enemies. We can no longer afford to ignore the situation. Gentlemen, if our industry is to continue to prosper, if we are to avoid unsettled and perturbed conditions continuously prevalent in other sections, we must look further into the future with a preconception founded on past experiences and must study out conditions scientifically.

"A standardization of our policies and practices is badly needed. A weakness in one system will invariably militate against all. The exceptions are used to characterize the industry. One lady, after describing the dark and dreary conditions of textile mills and villages, finally acknowledged that her

basis of authority was a little isolated mill, miles away from a textile center, and run by a man incapable of holding any responsible position. The time has passed in which we can live unto ourselves alone. We must collaborate. One mill through a bad step can do the industry more harm than ten can offset with wisely directed policies.

"Your systems of human relationship and social service should be in keeping with the splendid physical equipment of your mills. The same degree of modernness, of standardization and efficiency which characterizes the machinery which turns out your products should also apply to your policies and systems in dealing with the men and women in your employment.



Which?

"Realizing that the primary object of any industry is and should be to earn a return on the investment, and also the necessity of keeping within the just bounds of sane economic and social laws in so doing, I warn you that if you do not assist in considering your industrial situation as a whole, if you do not lend your efforts and service in correcting the weaknesses in your system, and if you do not consciously plan and outline the industry for the future; unsympathetic outsiders are going to do it for you."

Though five years have elapsed since this speech was delivered, and though late events substantiate the soundness of the appeal, many mill executives continue to exercise only a passive interest in this most critical problem. At one time, the power to avert industrial strife in the Textile South rested in the hands of southern mill executives, but unfortunately only a very few were far sighted enough to see danger ahead. The mill executives continue to possess the power to avert most of the tragedies of industrial warfare, but they cannot longer afford to "let things run their course." They can not sit idly by and expect a fermented situation to adjust itself satisfactorily unless they lend a hand.

What can the mills do? They must first be sure that the Textile House is put in order and they must then co-ordinate their efforts in enlightening the public as to the true conditions of the industry and thereby refute the insidious charges which are constantly being hurled at the southern mills.

The job of putting the Textile House in order in so far as industrial relations are concerned will not be such an easy one. The situation at most southern mill is good, but unfortunately there exists a few that merit severe criticism. Those mills that have interested themselves purely in the job of turning out yarn and cloth without considering the welfare of their employees have not only greatly handicapped themselves but have also been a "thorn in the side" of the entire industry. The average mill executive is no more an autocrat than is the average executive of any other business enterprise with which the writer is familiar—yet he has been called a mill baron. The average mill village is far superior to the sections inhabited by working men of other industries—yet the conditions in the mill villages are greatly deplored. The relationship between the average textile employee and employer is more wholesome than it is in other industries—yet it is proclaimed as terrible; the average mill worker is happier and healthier than the average southern working man — yet his fate is bemoaned.

The entire southern textile industry has been and will be judged by the exceptional cases and it is high time that definite steps be taken to strengthen the weak places. It is well that the best system of cleaning cotton be studied; it is well that mill executives consider the advisability of oiling their raw stock; it is expedient that their associations deal with mechanical problems, but they should also consider the preservation of industrial harmony. Such subjects as taxes and tariffs are of paramount importance, but it is well that consideration be made of industrial relations—present and future. Farsightedness is essential in the purchasing of cotton and mill supplies, it is even more so in the labor policy. It is far better to anticipate and plan for timely changes than to be forced into them. It is easier to forestall a tide of antagonism and bitterness than it is to combat it after it has gained momentum.

Irvin Cobb has said that what North Carolina needs is a good press agent; the same can be truly said of the southern textile industry. The outsiders are really not given an opportunity to know what the southern cotton mills have and are doing. They are ignorant of the merits of the organizations and can only visualize them through the eyes of the writers of feature articles and the speeches of those who have some ax to grind. Few if any of the present publications are going to interest themselves with the mill viewpoint, and it apparently is up to the mills themselves to see that the public has an opportunity of properly appraising the southern textile industry.

WHEN
Will Supply *and* Demand Meet?

By Leavelle McCampbell

WHEN will the ills of overproduction that beset cotton textiles have run their course? When will the supply of cotton cloth be balanced with demand?

A sound answer to these questions supported by such facts and figures as are available should give heart to every textile executive, courage to the bankers who have stood by an ailing industry and should be of more than passing interest to the holders of textile securities.

WE PRESENT this article by Mr. McCampbell as a thought-provoking discussion of the outstanding problems of the textile industry today. It should be read by every one interested in the industry, regardless of what his position or connection may be.

The important subjects of balancing production to demand, of curtailment, of replacement and addition of the industry's operating equipment, and others, are discussed from a viewpoint, and with a back-ground which includes observation from both the manufacturing and distributing phases of the business.—

—THE EDITOR.

This industry is basic and can not die; people must have clothes; the makers of a thousand things must have cloth and inasmuch as no industry can permanently exist without profitable operation by a majority of its members it follows that recovery is certain. Even the most pessimistic must also agree that every increase in cloth consumption and every decrease in the equipment with which cotton mills serve their markets must hasten the date of this recovery.

Fortunately we have at hand rather complete statistics. With regard to consumption these figures are most encouraging. From the standpoint of equipment they point clearly to the conclusion that we are making substantial progress towards normal and healthy conditions.

Production Versus Shipments.

For several years the Association of Cotton Textile Merchants has collected and published figures on the production of standard constructions of cloth. These record about forty per cent of the total cloth made and since January, 1928, are from substantially the same groups of mills. The totals presented cover all of 1928, all of 1929 and the first four months of 1930. Potential production is determined by assuming that the greatest output in a single month was maintained throughout the whole twenty-eight month period under review.

Potential production was	9,084,801,000 yards
Actual production was	8,199,506,000 yards
Actual shipments were	8,091,271,000 yards

Had these mills run at peak production they would have over-produced their market to the extent of 12.29 per cent. They actually did over-produce by the narrow margin of 1.34 per cent. The penalty exacted in the shape of price concessions for this infraction of economic law has been out of all proportion to anything gained by such lower costs as were thus obtained. Had these units under-produced by exactly the same margin buyers would today be on their knees pleading for deliveries and sales forces could be cut in two.

Formerly every five years and lately every two years the Bureau of the Census has collected data on the production of cotton textiles. To determine domestic consumption this has been corrected by adding imports and deducting exports. Figures for 1929 unfortunately will not be available until October. This table parallelled and corroborated by the record of raw cotton consumption during the same years shows America's ever increasing demand for cotton cloth.

Domestic Consumption.

Year	*Cloth Consumed*	*Raw Cotton Consumed*
1899	4,280,959,417 yards	1,793,000,000 pounds
1904	4,720,074,364 yards	1,888,000,000 pounds
1909	5,960,842,706 yards	2,505,063,682 pounds
1914	6,549,334,805 yards	2,666,001,024 pounds
1919	5,684,106,139 yards	2,756,117,408 pounds
1921	6,258,631,379 yards	2,338,697,216 pounds
1923	8,018,669,489 yards	3,186,391,976 pounds
1925	7,307,500,310 yards	2,960,453,326 pounds
1927	8,478,396,163 yards	3,436,621,630 pounds
1929		3,389,529,070 pounds

In 1919 the effects of the Great War brought about a decline and in 1925 high-priced cotton again caused a drop. Perhaps short skirts and the advent of rayon helped along these recessions but in spite of an occasional ebb the tide of consumption steadily rises. The average gain for each of the twenty-eight years covered has been 153,122,740 yards.

Per Capita Consumption.

During this time our population has grown from 76,129,000 in 1899 to 121,600,000 in 1929. Every single year has shown an increase. This is as it should be. Furthermore if we can judge by the record of the past decade it is likely that in this way Providence will continue to furnish us with 1,576,400 additional customers every year, and the babies are customers for cotton cloth even before they get here.

The most interesting thing about these statistics

is the relation between population and cloth consumption. In comparing the two we find that in 1899 the average American consumed 57 yards and that by 1927 this per capita figure had risen to 71 yards. This indicates that we are likely not only to have more customers but bigger and better customers.

In the last analysis goods bought are goods consumed although for any single year this is not quite accurate. For instance, prices in 1927 were low and there was a marked tendency to buy ahead of requirements. Possibly it would be fairer to average the census years. These show per capita consumption in 1923 as 72 yards and in 1925 as 64 yards, which combined with the 1927 figure of 71 yards gives a six year average of 69 yards. Either of these methods of determining present per capita consumption effectively silences the contention that changes in fashion and the substitution of artificial fibres are responsible for textile troubles.

Spindles in Place.

Now let us consider the equipment that produces the huge yardage we have been discussing. Practically all cotton mill statistics are compiled in terms of spindles. The Bureau of the Census has gathered these figures regularly for a long while. They are comprehensive and authentic.

The total combined spindleage of American cotton mills reached its peak in December, 1924, when the industry could show 37,939,772 spindles in place. During the following year 67,836 of these were taken from position. Since then the decline in this list of available machinery has been continuous and impressive as is shown in the following table.

Dec. 1926	37,364,730	a decline of	507,206 spindles
Dec. 1927	36,465,976	a decline of	898,754 spindles
Dec. 1928	35,267,086	a decline of	1,198,890 spindles
Dec. 1929	34,585,304	a decline of	681,782 spindles
Apl. 1930	34,195,464	a decline of	389,840 spindles
Total			3,676,472 spindles

Therefore for the past four and a third years we have torn down our plant at the net rate of 865,052 spindles or 2.37 per cent a year, and the current rate at which we are carrying on this program exceeds this startling figure.

New Spindles.

As a matter of fact, demolition has proceeded at even a greater rate than thus indicated, because "spindles in place" also includes those that are built each year. Figures on these new spindles are not published but the manufacturers of spinning equipment have very graciously furnished the following five year record of all they have installed in American mills including new building, additions and replacements.

1925	343,292 spindles	1928	255,912 spindles
1926	217,264 spindles	1929	320,784 spindles
1927	496,192 spindles	Average	326,688 spindles

This indicates that about 1,200,000 spindles are really finding their way to the scrap heap annually. If we divide this figure into the number of spindles now in place it establishes in a rather practical way that the business life of an American spindle is almost exactly thirty years. There was a time when the manufacturer could twist a profit out of a spindle for a longer term but the chances are that this period of usefulness will hereafter be shortened rather than lengthened.

MR. McCAMPBELL shows that within the last few years, the spindleage of the American industry has decreased at the rate of 865,052 spindles, or 2.37 per cent a year; that, in fact, demolition has proceeded at a greater rate than is thus indicated, because "spindles in place" includes also those that are built each year. During the past five years, according to reports of machinery manufacturers, the average yearly installation of new spindles, including new buildings, additions and replacements, has been 326,688. This indicates that about 1,200,000 spindles are really finding their way to the scrap heap annually. Dividing this figure into the number of spindles now in place, Mr. McCampbell points out, it establishes in a rather practical way that the business life of an American spindle is almost exactly thirty years.

If we take the current rate of 326,688 new spindles a year and assume that not a single spindle is added to the number we have it will require something over a hundred years to reconstruct our present plant. Surely this is a most inadequate program of renewal and one which cannot continue without greatly accelerating the passing of machinery now in place.

Active Spindles.

So much for the plant. Let us see how much of it has been and is actually in operation. Of this the Bureau of the Census also furnishes quite a complete record.

In 1900 there were 19,472,232 active spindles. By 1910 there were 28,266,862 or nearly 9,000,000 more. That decade was the heyday of mill building and mills constructed during that period still form the backbone of cotton textile production. We have seen however that the practical business life of a spindle is thirty years. Therefore this large section of equipment is nearing the end of its usefulness and must soon become ineffective from a competitive standpoint. This is another factor pointing to a more rapid decrease in spindles in place.

After 1909 building continued at a slower rate but 1923 saw 36,260,001 spindles in operation. That was the peak and really marked the beginning of over production. Since then, for seven straight years there has been a decline. The record runs as follows:

1924	35,849,338	a decrease of	410,993
1925	35,032,246	a decrease of	817,092
1926	34,750,266	a decrease of	281,980
1927	34,409,910	a decrease of	340,356
1928	33,569,792	a decrease of	840,118
1929	32,417,036	a decrease of	1,152,756

It should be understood that the Bureau counts as "active" every spindle that ran at any time during each year. In 1929 the greatest number that ran in any one month was 30,924,184, the average per month was 30,404,696. The difference of 2,012,340

between this average figure and that for 1929 used in the table may be considered as potential productive capacity likely, at any propitious time, to come back into operation. The difference between the 32,417,036 "active in 1929" and the 34,585,304 previously given as "in place at the close of 1929" amounting to 2,168,268 may be fairly described as idle spindles. Very few of these will ever run again.

Survival of the Fittest.

It is not a pleasant thing to contemplate unemployment, the passing of fine old names, the destruction of values, but "Survival of the Fittest" is a law that knows no mercy. Any reasonable analysis of our industry shows beyond question that its forces are at work. Slowly, surely they will bring about the balance of supply and demand.

In the meantime, it behooves every mill executive and every selling agent to keep his sails trimmed to the prevailing winds, to keep his production better balanced with current demand, to keep his inventory down to market requirements, to discourage the abominable practice of producing goods only to move them through price concession and finally, to acquaint himself with every fact and figure that will help toward sounder merchandising. Curtailment by attrition is a long, long trail. Progress over it is difficult and demoralizing even to those who are fitted to survive.

Leavelle McCampbell

From the combined aspects of increasing consumption and decreasing equipment we are eating each year into our capacity to overproduce at a rate exceeding four per cent of the total production.

If consumption and equipment were the only factors to be considered it would be easy to say *when* and the actual day of deliverance could be accurately foretold. Unfortunately there are two others, speed and running time.

Of these speed may be dismissed as relatively unimportant. It is true that the modern spindles turn faster than the old, but the percentage of new spinning being introduced is less than one per cent and its excess speed distributed to cover the whole can be only a fraction of that.

Increased Running Time.

The increase in average running time, brought about chiefly by the change from day time operation to day and night operation, is however a major factor and looms large upon the horizon. There are those who feel that the whole solution of the problem of over-production lies in checking and possibly stopping this development entirely. It is attacked on moral grounds. Legislation to prohibit the employment of women and minors at night is threatened. But the hard-boiled fact remains that the mill running day and night can produce cotton cloth at lower cost than the mill running daytime only. As margins between cotton and cloth have narrowed, the incentive to pursue this policy has increased and additional mills have adopted it.

Since the cotton fiscal year ending July 31, 1922, the Bureau of the Census has collected this data showing the aggregate running time in terms of spindle hours.

1922	89,308,613,876	1926	93,941,080,761
1923	101,931,101,448	1927	102,605,403,478
1924	84,359,693,047	1928	96,451,049,937
1925	91,054,615,317	1929	99,604,009,191

The year 1922 reflects the Great New England Strike which caused the loss of some four billion spindle hours, followed by the effort in 1923 to make up this lost time.

In 1924 distribution was badly handicapped by the fact that May and July cotton oversold the Fall options as much as four to six cents a pound. This phenomenon in lesser degree we have with us again. In 1924 it resulted from lack of carry over, a natural cause. Today it is brought about artificially by the stubborn refusal of a Government agency to recognize the economic fact, that cotton can find its way to market only through the doors of a cotton mill. If the Federal Farm Board will review the 1924 cotton consumption figures perhaps they will realize that when they play havoc with textile distribution they injure the very farmers it is their avowed purpose to protect.

In 1927 low-priced and advancing cotton brought increased distribution and the dip in 1928 was an echo of the New Bedford Strike when some three billion spindle hours were written out.

These figures on spindle hours offer a method of measuring the extent of double shift operation. By comparing them with the number of active spindles we learn that the running time in hours per active spindle in recent years has been as follows:

1922	2501 hours	1926	2703 hours
1923	2811 hours	1927	2892 hours
1924	2353 hours	1928	2873 hours
1925	2594 hours	1929	3073 hours

Since the Cotton Textile Institute was founded voluntary curtailment has been preached from the house-tops. In principle every mill executive accepts this doctrine. In practice they "let George do it." The record is before you. Possibly like bad boys they run for the sole reason that the teacher says not to. If the Institute pleaded with them to lengthen their running time maybe they would as promptly shorten it. This stubborn streak in human nature frequently crops out. President Hoover tells us that the depression is over and hundreds promptly dump their stocks. Perhaps if we quit talking about the evils of night running there will be less of it.

Whether curtailment be voluntary or involuntary there is ample evidence that over-production has run its course. The ability of the industry to increase its running time by two hundred working hours, nearly a solid month, in 1929 was amazing, but even so the total failed to reach either that of 1927 or that of 1923. It is unlikely that we ever again shall see such a spurt. If not, stabilization has arrived.

Just how much longer the practice of increasing running time will continue is a difficult question to answer. Most well informed members of our industry are agreed that it is nearing its zenith, and that fewer and fewer mills will take part in such a program. The discussion about it has raged so fiercely that the average mill executive has taken a position for it and put his mill on night shift or declared himself against it, and is not likely to do the thing he has decried. Public opinion, the prospect of prohibitive legislation and the cost of housing the night shift may deter those who are on the fence.

It is not conceivable that we can take care of increasing consumption and at the same time progressively destroy the equipment with which we make our goods. Somewhere these lines must cross. Sometime there must come an end. When it does there is likely to be a textile boom greater than any we have known for it will find us with a plant gone beyond the possibility of quick rehabilitation.

Economic movements follow the course of a pendulum. The measure by which they have gone too far in one direction is likely to closely approximate that by which they will go too far in the opposite direction.

Will we quickly add spindles, build new mills and recreate the conditions from which we shall have escaped? Possibly so, but it will be a slow process for who is going to invest until we can show capital a record of adequate return for several succeeding years? Who is going to build new mills when sound existing units can be bought at Court House values?

There must be this logical sequence; first, a return to profitable operation; second, the maintenance of earnings for some reasonable period; third, the recovery of cotton mill securities to a level based on something approaching replacement costs. These must precede any extensive building program.

N. C. Cotton Manufacturers Meet.

W. D. Briggs is Elected President.

The annual convention of the Cotton Manufacturers of North Carolina was held on June 17th and 18th at the Grove Park Inn, in Asheville. W. D. Briggs, president and treasurer, Caraleigh Mills Co., Raleigh, N. C., was elected president, succeeding J. H. Separk, of Gastonia. K. P. Lewis, of West Durham, was elected first vice-president; and C. A. Cannon, Kannapolis, and A. M. Fairley, Laurinburg, were made second and third vice-presidents, respectively. Hunter Marshall, Jr., was re-elected secretary-treasurer.

Among the important business transacted was the adoption of a number of resolutions. One resolution adopted endorsed the soundness of a 55-hour week operating schedule for the mills of the state. Another commended the prohibition of employing persons under 18 years of age in industries, between 9:00 P. M., and 6:00 A. M. Another pledged the association's assistance in the State Board of Health's efforts in preventing stream pollution.

Sloan Speaks on Balanced Production.

The theme of the meeting was "Balanced Production," and George A. Sloan, president of the Cotton-Textile Institute, spoke upon the economic soundness of balancing production to demand. He told of the results of the industry's response to an opportunity in reviving fashion interest in cotton, and expressed the belief that amplified work of this character should be carried on, with a minimum of $1,000,000 annually available for the purpose.

Address by Fred L. Keen.

Fred L. Keen, of Iselin-Jefferson Company, New York City, also addressed the convention. Mr. Keen followed the theme of the meeting, and submitted an interesting proposal to establish a "Central Advisory Board" for the industry. Said he:

"The scope of the cotton textile industry warrants and demands, in my opinion, the founding of the strongest and broadest 'Central Advisory Board' that any industry has ever attempted. Such a body would embrace the widest executive experience and most capable organization ability that the industry affords." He declared that such a source of composite thought and directional leadership would include among its functions, the recording, dissection and analysis of constructive suggestions for the betterment of conditions, in which capacity it would function more or less as a supreme court for the industry; thorough research through distributive fields; compilation and distribution of statistical information as to production and consumption, coupled with forceful recommendations as to a balance of these factors; cooperation with and direction of rotating committees from each class of fabrics; and the dissemination of information concerning up-to-date market requirements as to distributive methods.

A "Central Advisory Board."

He stated that such an organization might well be built up around the Cotton-Textile Institute, materially broadening its functions; introducing in an advisory capacity, a principle of merchandising direction which has not heretofore seemed a part of its operation, by combining with the institute organization the Association of Cotton Textile Merchants. Such a combination, he said, would not only merge the financial but the moral support of these two representative bodies. No individual selling house, mill or mill group, he said, need feel that their individuality, self-importance or independence would be lessened by willingness to work in cooperation with such a centralized source of coordinated information.

CURRENT TOPICS

Talk of the Month

CERTAIN ILLS develop in times of depression from which no cure but time appears. The current year seems to have brought a demonstration that the "cycle" in business has not passed and also that ideas of "stabilization" may need to be modified. However, in the latter case is a possible clue to the solution of the problem of cycles. In any event, the year is full of significance as one emphasizing the value of operating on basis of fact rather than fancy or foolish desire to get ahead of the field by stretching capacity to reduce overhead and move production at any cost. The unavoidable price-cutting of such a policy only prolongs the agony and so accentuates the depression.

Extraordinary changes have come in the raw materials of the world this calendar year. The fall of several commodities recently to extremes never known before—in the case of rubber to the lowest on record abroad and the bottom for many years in the United States—has been a disconcerting factor in industry. But it may in the end have a salutary effect in teaching a lesson on artificial versus natural stabilization. The world has been over-producing commodities in several cases under the stimulus of schemes for maintaining the price at so-called profitable levels and the artificial manipulation of the markets has been disastrous.

Take a Tip from Rubber.

These things are pertinent to the cotton situation because many feel that the Federal Farm Board, and the cotton cooperatives, have been adding to the depression in the industry by its program for so-called stabilization. A price-fixing policy when consumption is small and foreign competition in the raw material is threatening the American staple, in the face of the experience of other countries with rubber, coffee and sugar, is a hazardous undertaking. Such measures not only lead to over-production but to lax methods of production, whereas those interested in the cotton grower know that efforts should be bent toward more intensive cultivation.

Cotton manufacturers have been working on the basis that stabilization is the fixing of prices in accordance with costs of production and elimination of the practice of cutting prices to move goods when it is known that thereby not one jot or tittle will be added to the ultimate turn-over. That does mean, however, an effort to keep prices at a certain level. Where the manufacturers are able to improve methods and reduce costs of production, the benefits can be handed on to consumers in lower prices. Thus stabilization is in a sound sense a concerted effort to eliminate the unreasonable price-cutting which precludes profits for anybody.

In their efforts to promote this idea, and notably through regulation of production, the institutes of the textile industry have done a work which even in the time of depression gives signs of benefit which will be permanent. The war closed with the old essential industries in a difficult position of over-production and the decade from 1920-1930 saw other lines of manufacture in a period of great prosperity, on the whole, while textiles suffered from a combination of circumstances which are well known. It is now figured that at last the wool branch is in virtually a state of equilibrium between production and consumption while the cotton industry is making a valiant effort toward proper adjustment.

More Interest in Co-operation.

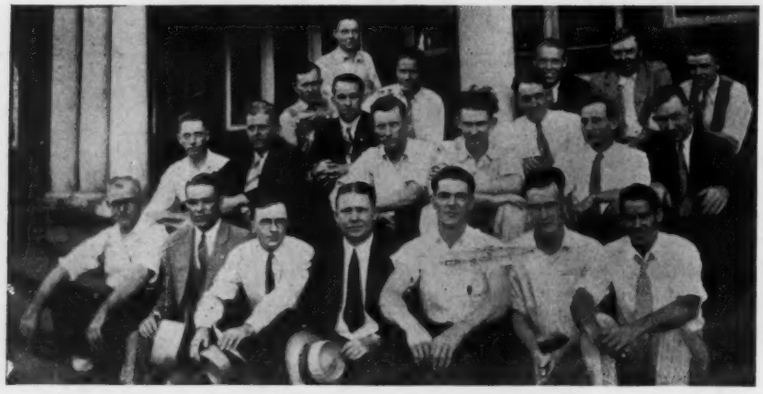
We would hazard the suggestion that these textiles now are in better relation to the general industry of the country than they have been since the war and perhaps will be setting the standards of soundness for others in the future. A report to Mr. Lamont, Secretary of Commerce, recently by the Cotton-Textile Institute indicated a great preponderance of the cotton mills to be in back of the movement of industry toward insuring greater uniformity of operations and regularity of employment. Presumably the levelling of peaks and valleys of production and employment should be the greatest possible force toward the minimizing of cycles in business.

Graphically showing the fluctuations of cotton manufacturing in relation to general manufacturing over the past eight years, the New York Cotton Exchange Service showed a recent tendency which may be significant of a new leadership by the cotton industry. It certainly reflects the new plan of mill operation. For the peaks and valleys in cotton manufacture have been incomparably greater than those in general manufacture, notably the valleys, until the current season. The chart shows an emphatic narrowing of the swings for the season of 1929-1930, in cotton manufacture, compared with its own record in previous years, and with general manufacture over the same period.

"Real prosperity can only be had through the cooperation of the buyer and seller," said Rudolph Zinner, secretary-treasurer of a company in the shellac industry, in a recent newspaper article and he made the point that "if in the same industry the prices for supposedly identical material vary widely, it is a clear indication that something is basically wrong. One or two irresponsible sellers can impoverish an entire industry and the ironical side of the whole picture is that the offenders are looked upon both by the Government and the public as saviors and benefactors, when they ought to be regarded as the greatest danger and menace to our prosperity."

It may be impossible to stop cut-throat competition among retailers in time of depression, while the uneconomic practice of trying to build business on

Members of Evening Textile Class at Thomaston Cotton Mills



Front row, left to right: T. W. Steward, Mack Cummings, J. A. Stewart, James R. McDaniel, Earl Edwards, Edward Maze, H. M. Hanson; second row: H. G. Sanders, C. J. Jackson, Fred Hanson, R. D. McDearmid, Eugene Lee, J. I. Register, J. P. McGlon, J. H. Maze; top row: J. W. Jenks, Frank Byrd, Dewey Womble, Frank DeLoach, W. D. Massey and Cecil Daniel.

"sales" has been having a new fling. As stated not long ago by Philip LeBoutillier, president of the National Retail Dry Goods Association, first there is over-production whereby some 35 per cent more is made than can be consumed in the country; second, in a survey of advertisements made over the country, some 80 per cent of the copy featured only sale merchandise, with the result that the average buying public has been educated to buy only at sales. This "salitis" that the retailer has developed has brought in volume, and more volume, but less profit.

What the manufacturer can do to ameliorate this condition evidently is confined to eliminating as far as possible the cut-throat competition at the production end. The community of interests in such an effort, as Mr. Zinsser indicates in the shellac industry, extends from manufacturers through jobber and dealer to consumer. Textile converters have recently indicated the same co-operative interest in a set of resolutions wherein they express the intention to watch manufacturers' efforts toward proper regulation of production and to avoid buying goods from mills which they believe to be following policies ruinous to their markets.

Even accumulations may be carried without trouble when prices are on the up-grade, but barely normal supplies may become burdensome in times of poor buying. An effort to stimulate sales by artificial methods pyramids the price-cutting movement, so to speak, and accentuates the aversion to buying from consumer back to manufacturer. Stocks, as stated by the National City Bank of New York in a recent survey of conditions generally, "acquire an exaggerated significance by reason of their being in the show window of 'visible supplies'. Once, however, prices are believed to have touched bottom, it is often surprising how quickly the bugaboo of excessive stocks disappears."

Thus it appears that the best way to hasten industry in general out of depression is to produce only in accordance with orders and at a profit, whether the price be high or low. It must be remembered that consumption—as it means the wearing out of goods purchased by the public in the past—goes constantly on its way in times of depression as well as in times of prosperity. The country is not going shabby and replacement will proceed as quickly as consumers see the assurance that bottom prices have been reached. And it is reasonable to believe that absorption will run along a more even keel when, if possible, production is regulated on the basis of calculated requirements through the year and not to accord with alternating active and dull periods.

More Interest in Mergers.

Closely associated with the efforts to promote means for alleviating the stresses of industry is the perpetual subject of mergers. The movement toward mergers of mills goes forward gradually, while the discussion of merits and drawbacks thereof is rife. In the textile industry and without, practical manufacturers and economists have given the subject their attention and it is by no means the conclusion that mergers, *per se*, are a sound practice. Here again a careful weighing of the circumstances may prove to be an advantage ultimately for the cotton industry and a possible lesson for others.

On the general proposition, James A. Farrell, president of the United States Steel Company, says that "bigness is no virtue in itself, nor is it by any means a guarantee of greater efficiency. There are instances where a number of small units are more effective than one large organization would be, and in those instances sound management and regard for the inevitability of practical economic laws will insure the survival of the small units in performance of the functions they are peculiarly fitted to discharge. The tendency to larger organization must justify itself in each specific instance. Where it demonstrably results in better diversification, greater industrial stability and efficiency, and gives to the public greater or better facilities for supplying its needs, there it is legitimate and will succeed."

A writer in the London Times pertinently states that, while much may be said for the moderate-sized unit in production, concentration of direction and resources in large units is, in my view, essential for marketing under modern conditions." This view would seem to lean toward the idea of mergers involving the vertical plan of linking the manufacturer with the finisher, the converter, the clothier and the retailer

and that might solve the problem of proper co-operation between producing and distributing interests. Such a linking of interests, moreover, should facilitate catering to the changing demands of the consumer.

If any industry is subject to rapidly changing tastes and consequently constant modifying of styles, it is textiles. Moreover, the producer must cater to individuality of taste in the consumer. The essential need of the mills has been better distribution service and the changing from dependence upon the old commission houses to closer actual connection of the mill with marketing agencies—direct representation in many cases—testifies to this need. The idea of consolidation has been notably related to the advantage that will accrue in distribution. For mills of moderate size that have had good productive and profitable records, therefore, a hesitation about going into the horizontal merger but a receptivity to the vertical merger would not be illogical.

What the Southern Mills are Doing

WHITTIER MILLS, Chattahoochee, Ga., were recently reported installing Bahnson humidifiers.

Rumors are circulating around that William Carter Co., manufacturers of rayon, wool and cotton underwear, will begin the erection of a $75,000 plant near Macon, Ga.

In addressing the Monroe (Ga.) Kiwanis Club recently, W. L. Phillips told of the proposed plans of rebuilding a new mill on the burned area at High Shoals, Ga., or of building a new mill in, or near Monroe. He said he thought either would be a great step forward for the entire section.

Holbrook trap and syphon combinations for drying cylinders are being installed at Thomaston (Ga.) bleachery.

Southern Manufacturing Company, Athens, Ga., recently purchased oil spraying equipment from Borne Scrymser Company of New York.

Columbus Mfg. Co., Columbus, Ga., has purchased the Armstrong roll covering unit to take care of cork rolls now being used in the mill. Walton Cotton Mills, Monroe, Ga., have also installed a roll covering unit in their mill.

Tucapa Mills, Spartanburg, S. C., are installing 50 new Draper looms for the manufacture of 48-inch and 50-inch cloth, which brings their total number of looms up to 800. They discarded 250 of the old type looms.

Winnsboro Mills, Winnsboro, S. C., are to install machines to better balance the departments and increase production. They also add that 25 new homes will be built and that work on the new community house will be started soon.

Union Buffalo Mills, Fairmont, S. C., recently purchased the Armstrong roll covering unit, which is to take care of cork rolls now being used in their mill. This mill is also equipping their Fairmont division with an R model Breton Minerol process for spraying oil, furnished by Borne Scrymser Company of New York.

LaSalle Textile Corporation, High Point, N. C., was recently granted a charter for the manufacture of yarns of cotton and silk with capital stock of $100,000.

Cross Cotton Mills, Marion, N. C., are continuing their program of improvement. Repainting and reconditioning of houses and installation of the Firth Smith system of vacuum cleaners are included among the improvements. Dyeing machinery and bleachery for hosiery and underwear yarns have also been installed.

Belle Vue Mills, Hillsboro, N. C., are putting in new rings and doing much overhauling. The Southern Spindle and Flyer Co., of Charlotte, N. C., has just completed work on the steel rolls and putting in three fly frames and pickers for the mill.

North Carolina Finishing Co., Salisbury, N. C., has awarded contract to Potter & Shackelford, of Greenville, S. C., to erect 2 ware houses and enlarge and remodel the bleachery.

Arista Mills Co., Winston-Salem, N. C., have replaced their old oil spraying equipment with Borne Scrymser Company's new 1930 equipment.

It is reported that Pinnacle Mills will establish a unit in Lenoir, N. C., soon. J. A. Bolin is to be general manager. Some supplies have already been bought.

Royall Cotton Mills, Wake Forest, N. C., manufacturers of sheeting duck and 20s-2 yarns, have awarded contract for Diesel engine units for their power plant.

Marion Mfg. Co., Marion, N. C., recently purchased high speed cone winders from Foster Machine Company, and warping equipment from Cocker Machine & Foundry Co.

Super-Weave Rayon Co., recently moved to Mobile, Ala., from Gloversville, N. Y., was scheduled to start operation about June 15. Assembling of machinery took place during the latter part of May.

B. E. Russell, general manager of Brucetown Woolen Mills, Inc., Winchester, Va., was recently reported to be in New York buying machinery on the open market for immediate delivery to replace that recently destroyed by fire. The new plant is being built at Clearbrook, Va., and was to be in operation by the middle of June. This company has been filling its orders at the Arthur G. Jones Woolen Mills since the fire.

Cotton Comment by H. & B. Beer

New Orleans, June 14, 1930.

THE TREND of the cotton market, except for periodical bulges, was downward the past month, due to numerous unfavorable international trade developments, the continuance of an indifferent demand for spots, small consumption estimates, the decline in silver, bearish statistics, ideas as to the probability of a larger acreage than was thought probable earlier in the year, the belief that boll weevil will not be destructive this year, and, except for unseasonal cool weather, a more favorable view of climatic conditions reviving hopes of the making of a good crop.

Compared with about one month ago the July position shows a decline of about 246 points, and new crop deliveries are down about 180 to 185 points. The premium on July over October, which at one time was about 192 points over October, and showed a premium of about 95 points on October about one month ago, today shows a premium over October of only about 34 points.

Recently Osaka, Japan, reprted: "Japanese cotton mills are suffering from record deflation of cotton goods business. Unsold and manufactured stocks are increasing. Record low price of silver adds to the gloomy outlook. Japanese Spinners Association has declared resolution for a further 10 per cent curtailment beginning June 15, making a total curtailment of 28 per cent. Consumption of American cotton in the Far East is decreasing heavily."

In early June London cabled: "There does not seem to be any warrant for assuming that a decisive turn for the better in general trade is imminent. Condition in Manchester cloth markets unimproved, and while aggregate business shows a slight increase, India and China markets are practically idle."

ASSOCIATION OF COTTON TEXTILE MERCHANTS OF NEW YORK, MAY STATISTICS.

Yards—	May 1930 5 Weeks	April 1930 4 Weeks	May 1929 5 Weeks
Production	275,201,000	257,243,000	341,370,000
Sales	184,473,000	223,225,000	278,335,000
Shipments	270,056,000	253,360,000	326,121,000
Stocks	450,481,000	444,736,000	367,340,000
Unfilled orders	271,745,000	357,328,000	382,512,000

' May sales of domestic cotton goods were 66.9 per cent of production, and shipments 97.9 per cent of production. Stocks at the end of May increased 1.3 per cent and unfilled orders decreased 23.9 per cent.

CENSUS REPORT

United States— Bales—	This Season	Last Season
Consumption lint, May	473,917	668,650
Consumption linters, May	68,779	79,911
Consumption, including linters, May	542,696	748,561
Consumption lint, 10 months	5,329,916	5,974,486
Consumption linters, 10 months	687,313	721,553
Consumption including linters, 10 months	6,017,229	6,696,039
Mill stocks, May 31st	1,531,346	1,475,837
Stocks in pub. stg. & whs., May 31st	3,337,360	1,845,771
Stocks in mills, pub. stg. & whs., May 31st	4,868,706	3,321,608
Active spindles during May	28,374,444	30,937,182

What the cooperatives policy will be as to disposing or holding from the market the large quantity of cotton received and to be received on contracts is problematical, except that the trade recently had the assurance of a Federal Farm Board official to effect that there would be no dumping of old crop cotton on an unwilling market.

Being in possession of so much desirable cotton, which represents a large portion of the visible supply in the United States, the important question is: how long will the cooperatives withhold their cotton from the market?

It will be a good while before new crop cotton is available in quantity ,and there may be a scarcity of desirable grades in the open market during July, August and perhaps September, especially if farmers place much of their early cotton in the hands of the cooperatives.

The visible supply in the United States yesterday was 2,604,167 bales against 1,378,640 last year, much of which is held by the cooperatives, and their holdings are likely to be increased considerably if they receive largely on July contracts.

Cotton appears to be comparatively cheap, Middling in New Orleans today 13.18, the lowest price since early January, 1927, the big crop season of 1926-27, comparing with 18.79 this day last year. However, there is an apparent lack of confidence in the ability of the cooperatives to advance prices and hold them up, as the market during the past month experienced an important decline notwithstanding the co-ops having received so much cotton on May contracts and probably will receive a good deal more on July contracts. But the co-operatives are to be assisted by the recently formed powerful Cotton Stabilization Corporation which may have about $50,000,000 to finance its operations. Recently Washington advised in part: "Although the new formed stabilization corporation will be ready for business shortly, the Chairman sees no prospect of immediate action to support the market. Such a move will be more likely at a time, a few months hence, when the farmers have the new crop on hand."

Recently it was reported that all cotton held by the cooperatives, totalling over 1,000,000 bales, will be taken over by the Cotton Stabilization Corporation, according to Chairman Legge, of the Federal Farm Board, in order to enable the cooperatives to handle the new crop.

As to new crop prospects, Chairman Legge said: "Farm Board advices are that boll weevil activity is not of unusual proportions but rather less than average. Definite idea as to the probable crop will be impossible until along in August, and that only a negligible amount of the old crop is held by farmers."

Latest of several private estimates as to this year's probable acreage decrease to be devoted to cotton range from 3.7 per cent to 1.7 per cent, averaging about 2.6 per cent decrease compared with last year's acreage planted of 47,067,000 acres.

Washington's weekly weather and crop summary, for week ended, Tuesday, June 10: "The weather was generally too cool for good growth of cotton except in some southeastern distaricts, but conditions were mostly favorable for cultivation and chopping.

"In Texas cotton made generally poor to only fair progress because of cloudiness in the south and cool nights elsewhere, though cultivation made good progress, with early squares forming to the central portion of the State. In Oklahoma planting is practically finished, but cotton is very late, and cultivation is poor in many sections, while the past week was too cool for good growth.

"In the central portion of the belt growth was generally slow, but moisture conditions favored improvement where formerly excessive rains fell. There is still some replanting in previously overflowed land.

"In the Atlantic States heavy rainfall in most sections was beneficial and better progress was noted in many places, though cotton is very irregular in some districts. Squares appearing in early fields in South Carolina and Georgia northward to Augusta, with blooming in south; but in northern Georgia recent weather was decidedly unfavorable, with growth slow and plants yellowing."

TOTAL AVERAGE RAINFALL IN TEXAS

Inches Year—	1930	1929	1928	Normal
May	5.19	7.70	3.37	3.66
November to May Inclusive	17.02	21.45	13.14	17.16

New England Mill Situation

June 18, 1930.

EFFORTS to establish the new merger of 1,000,000 New England fine goods spindles on which representatives of the Bancamerica-Blair Corporation of New York have been working for a long time have received some promise of success in the recent past and although the path which this group has followed has been beset with difficulties, its officials are confident of success. An unofficial announcement has recently been made from this corporation of formation of a committee of representatives of the several mills, of unanimous decision to go ahead with the plan, and of action of the bankers in at once putting auditors on the books.

Unofficial confirmation from an important quarter has identified ten mills as having signed agreements to submit to their stockholders recommendations calling for acceptance of the corporation's offers during the recent past. These mills are not, however, bound to enter, it appears, clauses in their agreements being interpreted as allowing them to withdraw at any time from this preliminary movement. One concern, the Grosvenor-Dale Company of North Grosvenor-Dale, Conn., has stated that it has withdrawn from negotiations under very recent date, illustrating this point and indicating that the merger may not be quite as near fruition as was thought. On the other hand assurances are given that the next 30 days will probably tell the story of success or failure in this plan.

The Bancamerica-Blair Corporation's merger is that formerly known as the Newman merger, from Jerome Newman, who carried on preliminary negotiations. It has been intimated that the merger would be formed only on condition of adherence of a minimum of 900,000 spindles, with 1,000,000 spindles the goal of negotiations. The statement of A. W. Dimick, treasurer of the Grosvenor-Dale Company and president of the Warren Manufacturing Company of Warren, R. I., that this firm had withdrawn complicates the previous situation where approximately 25,000 looms and 1,000,000 spindles were promised.

This leaves the merger with the following mills, totalling under 800,000 spindles:

The Bristol Manufacturing Corporation of New Bedford, of which Frank I. Neild is general manager, with 1866 looms and 67,000 spindles.

The Neild Manufacturing Corporation of New Bedford, of which Frank I. Neild is president and general manager, with 1,640 looms and 62,636 spindles.

The Dartmouth Manufacturing Corporation of New Bedford, of which Walter H. Langshaw is president, with 5,700 looms and 200,000 spindles.

Davis Mills of Fall River, of which Frank L. Carpenter is treasurer, with 2,549 looms and 130,368 spindles.

Lincoln Manufacturing Company of Fall River, of which Israel Brayton is treasurer, with 3,190 looms and 148,608 spindles.

The Merchants No. 3 (Crescent) Mill, Fall River, estimated 40,000 spindles.

Pilgrim Mills, Fall River, of which B. H. Bristow Draper is president, with 1,178 looms and 54,144 spindles.

The Queen City Cotton Company, Burlington, Vt., of which B. H. Bristow Draper is president, with 1,435 looms and 63,952 spindles.

The Grosvenor-Dale Companyy, with which negotiations were carried on, had 3,821 looms and 124,000 spindles at its North Grosvenor-Dale, Conn., plant, with William Grosvenor as president and Mr. Dimick as treasurer. With it is affiliated the Warren Manufacturing Company, also mentioned in the merger, with 2,750 looms and 132,000 spindles at its Warren, R. I., plant. Of the latter Mr. Dimick is president and W. S. Pepperell is treasurer. A recent announcement was that the Warren Manufacturing Company would shut down for an indeterminate period starting July 1, its current operations being limited to running out the warps.

The merger has been making overtures to other concerns. Although not signed, negotiations have gone on at some length with Lawton Mills Corporation of Plainfield, Conn., of which John Porteous is president, with 2,443 looms and 129,760 spindles. The Paul Whitin Manufacturing Company of Northbridge, Mass., of which Paul Whitin is treasurer, is understood to have had an offer for its 2,026 looms and 71,753 spindles, and Aldrich Brothers of Moosup, Conn., and Providence, R. I., with 1,702 looms and 56,704 spindles has also been a recipient of an offer, although possibility of acceptance is regarded as doubtful. Several other concerns have been approached.

Elisha Walker and E. A. Tinker of the Bancamerica-Blair Corporation are working on the banking end of the merger, and other representatives of the concern are handling other details.

Progress of this Bancamerica-Blair Corporation merger has been watched very closely in the industry and is the outstanding feature in the fine goods trade at present, not alone due to its own size, but further to implications that it may if formed be a still greater force. Rumors circulated that the ultimate goal of some of those identified with the merger was a much greater one than indicated, and that a merger capable of dominating the fine goods industry was at hand, are declared to have some basis in fact, although no official is yet prepared to answer such questions.

The other mergers in New England have been faring satisfactorily in a very dull season. No changes in their organization or make-up has developed during the period. The Berkshire Fine Spinning Associates have struck the few optimistic notes in the market, reporting steady sales equalling curtailed production from week to week during the period. The Loring merger, or United Merchants and Manufacturers, has announced no changes.

Trade in the fine goods industry has been dull on the whole during the past month. Reports are to the effect that the fine goods industry as a whole was operating somewhat in excess of 60 per cent of average normal capacity. Many mills are, however, having difficulty in keeping this percentage of their looms operating, and here and there shutdowns have occurred or are pending. The competition for business, even for fancies, has resulted in considerable price cutting and only a meager profit is accruing to the mills. On the staple bread-and-butter lines prices have been very low, representing losses in many cases.

Conditions in southern New England have been very slack. In Fall River and New Bedford there are some mills that are running much below 60 per cent. Those on fancies are generally operating better than others. There have been a few large curtain goods orders placed taking care of some of the manufacturers of coarser cloths in Fall River, according to reports, but none too many, and these at low prices. Some of the mills on fine Jacquard work are doing fairly well. Bedspread mills have had some business, but have generally been running below normal for this season.

In the Rhode Island industry very slow times are reported. In addition to the shutdown due July 1 in the Warren Manufacturing Company, there is a 10 day shutdown now in progress at the Ann and Hope Mills of the Lonsdale Company in Cumberland, R. I., with resumption indicated for June 23. The Ashton and Berkley plants of the same company are on a three day weekly schedule, with only the fancy departments reported in operation. The Lonsdale Company's Blackstone plant is planning to shut down one week this month and two weeks in July, due to slackness of demand.

In the face of this dullness the proposition of curtailing nine weeks between the present time and the close of the year has been advanced in some quarters, and individual mills have given their support to this plan. It is certain that some adjustments are shortly to be made, for few mills can endure the present fine goods prices and the situation has reached a dangerous point in some quarters. For such curtailment the industry has looked to the mergers for leadership in many cases, and those at present operating have given their support to the proposition of better regulating production to demand. Further the new merger has been at work attempting to advance stability, its backers seemingly having an interest in ensuring some kind of profitable market rather than embarking on a price war. The theory followed is that the mergers will be better able to adjust differences than will the current multiplicity of small mills.

The Fisk Rubber Company's Ningret Mills at Jewett City, Conn., are planning to shut down for an indefinite period as soon as cotton in process is run off. The plant previously ran day and night shifts with 400 employes. Complete shutdown is planned by July 1. Employes will be allowed to occupy company houses without rental.

The American Printing Company of Fall River, is closing at noon Saturdays at present until further notice. Curtailment is reported in the Pacific Print Works in Lawrence, Mass. Operations continue unchanged at the Algonquin Printing Company, Fall River, although the printing and finishing divisions generally through New England are not as active as was recently the case. The American curtailed heavily last summer, although operations have been steady since that time.

Wamsutta Mills of New Bedford, manufacturers of Wamsutta sheets, pillow cases, and other products, who formerly sold through Ridley Watts & Company, New York, have announced that they will establish their own selling offices in New York, Boston, Chicago, and San Francisco, effective July 1, when the Ridley Watts firm is to be dissolved. Ridley Watts & Company were also selling agents for Victor Monaghan and other southern mills, most of which go to J. P. Stevens & Company. The Wamsutta corporation dates back to 1846 and produces one of the finest lines of its type in the market. C. F. Broughton was elected treasurer and general manager of the mill in 1919, when it was thoroughly modernized, and under his direction Messrs. Johnson and Stuart of Ridley Watts & Company will organize the new independent selling offices.

Amoskeag Manufacturing Company has opened its new lines of fall suitings successfully. The company also announced that it would reimburse all employes who lost their recently paid bonuses in the failure of a Manchester, N. H., bank. Amoskeag's fall gingham lines were also opened successfully recently.

A third dividend in liquidation is expected to be paid by Everett Mills, former large gingham manufacturers at Lawrence, Mass., shortly.

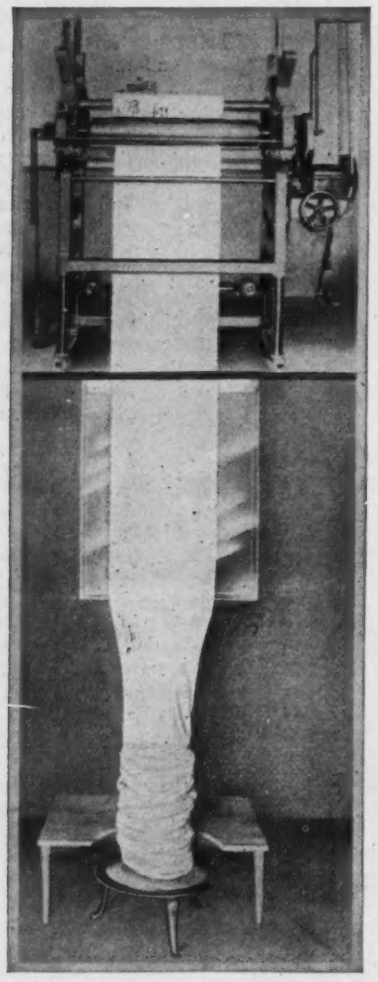
Putnam Spinners, Inc., has taken over National Rhea Company and will resume rayon yarn production at Putnam, Conn. Richcon Manufacturing Company, makers of work clothing, have established a plant at Medway, Mass. The Lucky Boy Clothing Company is moving its garment manufacturing plant from New York to Fall River. Utica Steam and Mohawk Valley Cotton mills, upstate New York, have begun production of seamless mattress covers made from Utica and Mohawk sheetings.

Nashua Manufacturing Company, large blanket producers, are establishing their own selling office, selling direct to the trade through its own New York offices starting October 1. Charles V. Ryer will be sales manager. Robert Amory will continue as treasurer and chief executive of the company, terminating his connection with Amory, Browne & Company, the 100-year old firm that previously sold Nashua's products. On September 30 Mr. Amory, Walter C. Baylies, and Lincoln Baylies, all of Boston, will retire from Amory, Browne & Co. The business of that firm will be continued under that name by John W. Bird, Jacques Bramhall, and Benjamin F. Meffert, according to the announcements.

New Textile Equipment and Publications

BUTTERWORTH TO MAKE NEW TUBULAR KNIT GOODS FINISHING MACHINE

H. W. Butterworth & Sons Co., Philadelphia, Pa., announced recently a new addition to their line of textile finishing machinery—the Butterworth "Perfectos" machine for drying, stretching and calendering tubular knit goods. The machine was developed in Leicester, England, by the Perfectos Machine Co., and is said to be equally efficient on silk, rayon, cotton and wool goods, and union materials. The machine, shown in the accompanying illustration, consists of a hollow metal cylinder or cartridge on which several hundred yards of goods are placed. At the bottom of this cylinder is a wide flange, which fits over an opening of the machine, which has a centrifugal blower at one end, by which air is forced across steam pipes and up through the cylinder. At the top of the cylinder is an apparatus somewhat similar to a vertical tenter frame, with about 25 small anti-friction wheels on each side. The goods are constantly pulled up over these.



Butterworth "Perfectos" Machine.

Both ends of this frame are open and curve toward one another. The goods are drawn up on this frame, where they are stretched, as they are dried by the constant blast of warm air, which it is pointed out, also flutters and agitates the goods.

When the goods reach the top of the tenter frame, they are fed between heated calender rolls, and are rolled up. It is claimed that an entirely different finish will be secured with this machine. In rayon, it is stated, it will provide a dull finish with sparkle and sheen, free of marks and glazing. A soft finish free of glazing can be produced on cotton or wool, it is stated, means being provided for securing either a bright or dull finish. It is further pointed out that all material can be examined during the finishing process. The new machine is really on two floors or levels, the calendering being on a floor above the drying and stetching part of the apparatus.

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AIR CONDITIONING IN KNITTING MILLS.

Parks-Cramer Company, Fitchburg, Mass., have recently issued Bulletin 530 covering, "Air Conditioning in Knitting mills." The circular states: "During the knitting process, yarn is subjected to very rapid manipulation. It should be free from kinks, uniformly smooth and supple. Adequate air conditioning maintains sufficient moisture in the yarn to keep it uniformly pliable. It prevents drop stitches and breakage. Properly designed and installed, it is indispensable to the knitter who strives for rapid production and perfect quality." The circular discusses the problems of air conditioning and yarn conditioning in connection with knitting mills. It shows illustrations of various types of humidification equipment installed, and shows also various types of humidifying equipment manufactured by the company.

DEVICE FOR TESTING HYPOCHLORITE BLEACH LIQUORS.

Solvay Process Company, Syracuse, N. Y., have through their laboratories, developed a new device for testing hypochlorite bleach liquors. This device, shown in the accompanying illustration, is described as being neat and simple;

it utilizes the principle that hydrogen peroxide is decomposed by hypochlorites, giving off oxygen gas. The amount of oxygen liberated is in exact proportion to the quantity of available chlorine present in the hypochlorite bleach, it is pointed out, and the only chemical required in the testing is household peroxide. The apparatus, it is explained, is so designed that the liberated oxygen displaces an equal amount of water, and the percentage strength of the bleach is found by merely noting the quantity of water in a graduated cylinder. Only a minute or two is required to make this test, it is stated. Information concerning the device may be secured from the company.

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A NEW A. C. MOTOR STARTER.

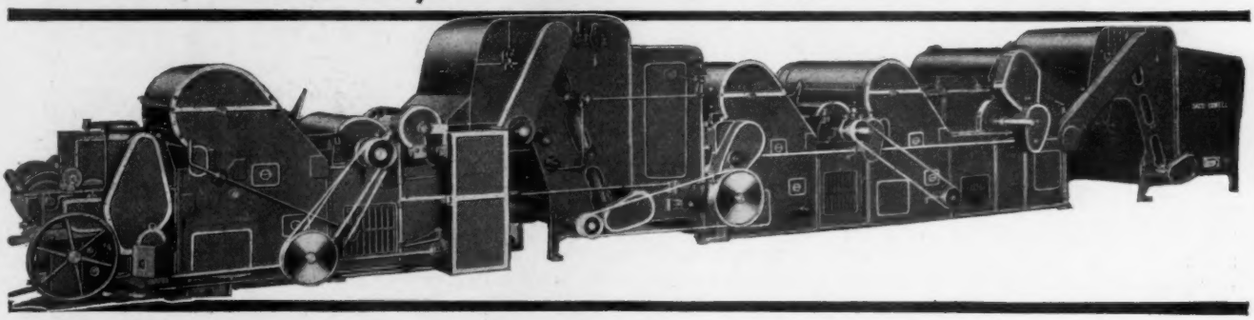
Cutler-Hammer, Inc., 109 12th St., Milwaukee, Wis., announce the development of a new A. C. across-the-line, automatic starter combined with a fusible disconnect switch in a single steel enclosing case. This new starter may be used in place of the separate starter and fusible disconnect switch requiring less space, simplifying installation and presenting a neater appearance.

The company points out that a feature is a wiring channel between the starter panel and the back of the enclosing case which allows running the connecting wires behind the panel, where they cannot interfere with the operation of the starter. Ample room is provided to bring all of the connecting wires in at either the top or the bottom of the case according to installation requirements, they say. It is also added that all parts are mounted on a back plate which is easily removed for pulling and placing of line and motor wiring.

SACO-LOWELL

One-Process Picking

With Synchronized Control



BLENDED AT THE BALE BREAKER . . . . . .

STOCK FLOWS AUTOMATICALLY THROUGH ALL PICKING AND CLEANING OPERATIONS TO FINISHED LAPS

WITH Saco-Lowell One-Process Picking, the stock is blended in the Opening Room and flows automatically (under synchronized control) through all picking and cleaning operations to emerge as finished laps, ready for the cards.

Blending is performed at its logical place, — the Opening Room. Consequently, there is no need for lapping, and the handling of laps, at the finisher lapper. Substantial labor-saving is made by this automatic processing, and the elimination of lap blending has greatly increased the quality of product. Substantial increase in yarn strength is a foregone conclusion.

Under the sponsorship of Saco-Lowell, One Process Picking has proved a great boon to progressive mills. First in the field, Saco-Lowell One Process Picking has been radically improved by Saco-Lowell engineers. Why not let them tell you the story NOW and get your mill in line?

SACO-LOWELL

MANUFACTURERS OF TEXTILE MACHINERY

147 MILK STREET, BOSTON, MASS.

CHARLOTTE, N. C. SPARTANBURG, S. C. ATLANTA, GA.

CALCULATING ATTACHMENT FOR COMPUTING TENSILE STRENGTH.

Henry L. Scott Company, Providence, R. I., have developed the Scott Calculating Attachment for direct dial reading in terms of computed tensile strength. The purpose of this attachment is to save computation or correction of tensile test results of textiles as indicated by the dial readings of the ordinary test machine to terms of the test at any standard of regain. It is offered, "as a practical means of solving common commercial differences rather than as a matter of technical or theoretical accuracy, although the mechanical features are correct."

The attachment, shown in Fig. 1, herewith, comprises a weight adjustable on the balance arm of a tensile testing machine, making possible a direct reading on the dial in accordance with correction factors of any predetermined table. On the balance arm is a scale. The long line in the middle indicates the point at which the weight is set to register actual pounds pull on the specimen. It is a well known fact that the strength of textiles is changed by the absorption of moisture from the atmosphere. Various formulae for correction are used as accepted practice and in some cases are specified. It is pointed out that when tests are made on a machine without the calculating attachment, the results are in terms of pounds pull on the specimen. It is then necessary to compute these results to determine strength at normal regain. The A. S. T. M. has set a standard regain of 7 per cent for cotton yarn, with a rate of increase in strength of 6 per cent for each 1 per cent of moisture regain, between the limits of 3 and 7 per cent regain. Assuming this basis in use, the following description of the use of the calculating attachment will be given:

The attachment consists of a sliding weight on the lever arm instead of the usual fixed weight. A cross-wire permits the accurate setting of the weight at any point on a scale which is a part of the lever arm. The scale is graduated to read in "per cent regain". If the scale is designed for use in testing yarn, on the basis outlined, then the machine functions as a tester in the usual manner when the weight is set at 7 (the standard regain for yarn.) Now, if a 50 pound weight is hung from the upper clamp, the reading on the dial will be 50 pounds. This, then, would be the proper setting of the weight in testing yarn conditioned to 7 per cent regain.

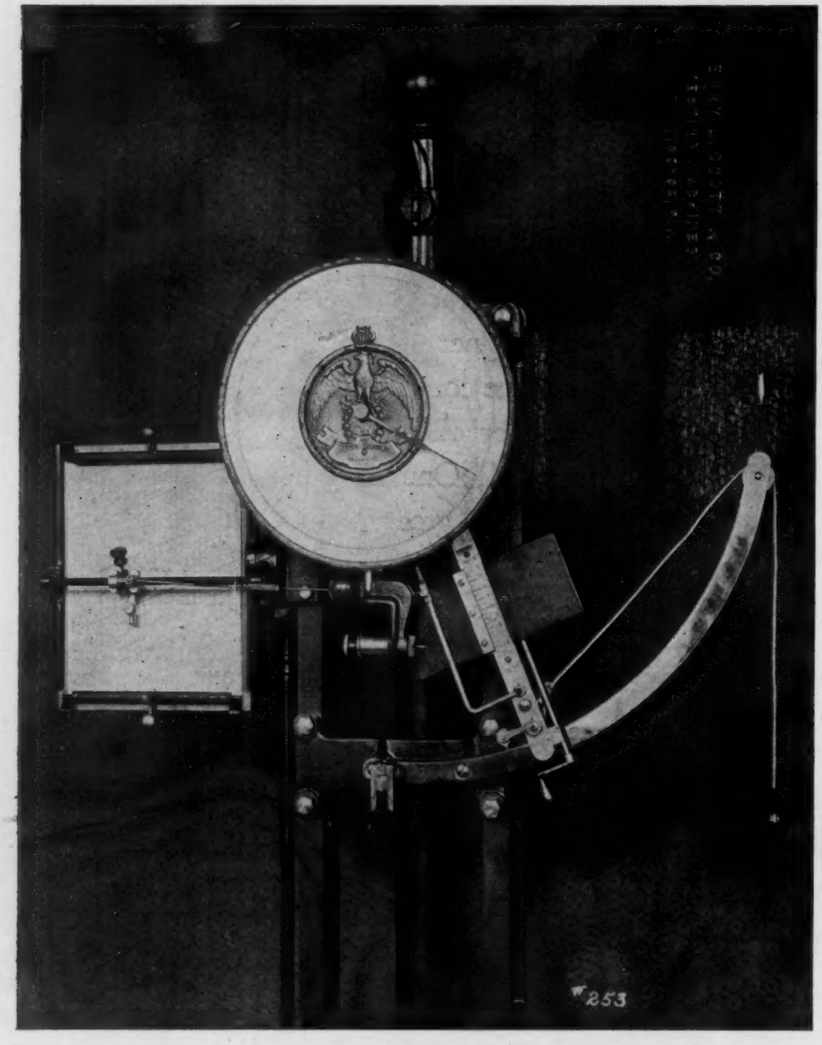


Fig. 1. The Scott Calculating Attachment.

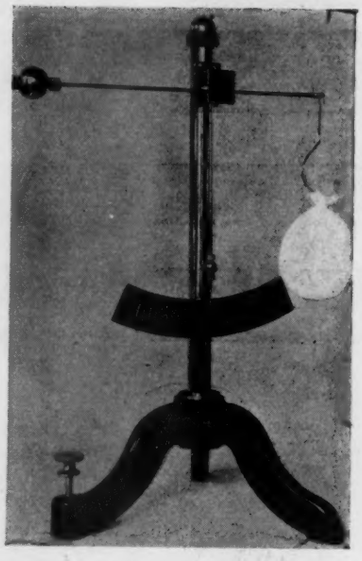


Fig. 2. The Regain Balance.

If the sample tested contained 5 per cent regain and its tensile strength as determined on a standard tester was found to be 120 pounds, its calculated tensile strength at 7 per cent regain would be 131 pounds. If, however, the sliding weight of the calculating attachment is set at 5 on the scale, it is pointed out, the dial reading would be 131 pounds, thus giving the result direct without any calculating. Similarly, if the regain is greater than 7 per cent, the weight is moved away from the fulcrum to make the machine read low. This discussion is based on a definite regain of 7 per cent and a definite rate of increase in tensile strength of 7 per cent, but any regain and rate may be used, and a scale developed accordingly.

As a means for determining the regain in a sample, the company has developed a regain balance, shown in Fig. 2. A standard sample of the material to be tested is made up of such weight that it would give a reading of zero when bone dry. The scale is graduated in "per cent regain," and therefore indicates at all times the regain in the standard sample. Samples to be tested are hung near the balance and after a reasonable time has elapsed, it is

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Wherever he goes the G.T.M.—Goodyear Technical Man—has a sharp eye for savings. Sometimes it is in materials. Sometimes in processes. Often he uncovers unsuspected losses in power transmission. He moves goods, liquids, air, and engine-power smoothly and without waste. In innumerable plants his skillful studies of operating conditions and accurate specification of Mechanical Rubber Goods to need, have led to new manufacturing profits. He knows manufacturing plants and their problems. He knows how and where to save.

In textile manufacturing, the G.T.M. has an outstanding record. He knows your work and how to reduce its costs. He has specified Goodyear Compass (Cord) Textile and Compass Endless Belts to drive your machinery swiftly and smoothly. He is introducing to your multiple drives Goodyear Emerald Cord Multiple V Belts for new operating freedom. He has supplied Goodyear Wingfoot Air Hose and Goodyear Water, Steam, and Fire Hose for economy in all phases of your work. He is an expert on your job. He can save money for you now.

For complete information on savings the G.T.M. can bring to your business, just write to Goodyear, Akron, Ohio, or Los Angeles, California.

GOODYEAR

BELTS MOLDED GOODS HOSE PACKING

reasonable to assume that they will have the same regain as indicated for the standard sample, the company points out. The sliding weight on the tester is then set to correspond to the regain indicated by the balance and the tests made in the usual manner.

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NEW TEXTILE PATENT ISSUED.

According to Paul B. Eaton, patent attorney, Charlotte, N. C., there was issued on May 20th, 1930 patent No. 1,759,518 to L. E. Monroe of Lakedale, N. C., which covers a structure called a "dot filling retainer." This invention is described as comprising hooks pivoted on the temple of the loom, so that in weaving filling material such as curtains and the like with dots therein, that the striking of the temple of the loom caused by the lay of the loom causes the hooks to move downwardly and engage the filling thread and hold it while the shuttle is being shot back through the warp, and if desired the filling retainer can be raised out of operative position by means of the harness mechanism. This mechanism, according to Mr. Eaton, displaces the ordinary thread used for holding the ends of the filling.

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NEW CATALOGUE OF COOPER COMPANY

Charles Cooper Company Incorporated, Bennington, Vermont, manufacturers of spring needle knitting machines, and spring beard and latch knitting needles, have issued a new general catalogue of their products. In addition to the company's standard rib body machine, the line comprises machines for knitting ribbed fabric striped swimming suits, collerettes and cuffs, and for cutting and folding special fabrics. A new machine is their spring needle multiple stripping machine, for ribbed or flat swimming suits, sweaters, etc. This machine will produce ribbed fabric, striped in four different colors, and a unique feature of it is that by removing the top needles, flat or plain fabric may be produced; on this class of work, the use of the striping attachment is optional.

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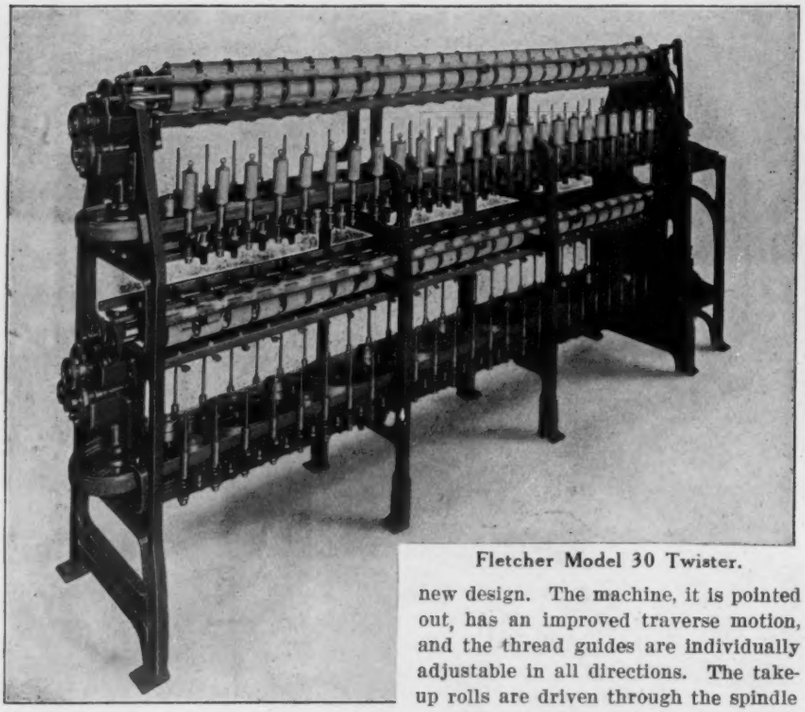
NEW FLETCHER MODEL 30 TWISTER.

Fletcher Works, Incorporated, Glenwood Avenue at 2nd St., Philadelphia, Pa., have announced the development of the Fletcher Model 30 Twister as the latest addition to the company's line of silk and rayon throwing machinery.

Among the points emphasized by the company in connection with this machine are that it is of a sturdy and rigid construction, designed for securing accurate and uniform twist and high production. The driving belt is made endless before application to the machine. There are idler pulleys between every two spindles for assuring uniform spindle contact. These idler pulleys which are of large diameter and revolve at lower speed, are equipped with large oil reservoirs. The vertical back shaft has seal packed ball bearings, and there is an individual adjustment on the spindles, which are of



Fletcher Model 30 Twister.

new design. The machine, it is pointed out, has an improved traverse motion, and the thread guides are individually adjustable in all directions. The take-up rolls are driven through the spindle belts. The twister is built in single and double deck types, the latter being shown in the accompanying illustration. Individual motor drive is used, each set being operated independently.

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BOOKLET ON SPIRAWHIRL.

Fales & Jenks Machine Co., Pawtucket, R. I., have recently distributed a pamphlet describing their new Spirawhirl Buckley cleaner, which was placed on the market recently, and which was described in these columns.

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"SCIENCE HELPS THE DYER."

The Cowles Detergent Company, Cleveland, Ohio, recently issued an attractive booklet entitled, "Science Helps the Dyer". It points out the influence of chemical science in the textile field, and describes detergents manufactured by the company, including Escolloid, described as an agent for bringing dyestuffs into more intimate, uniform and permanent contact with cloth fibers.

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NEWPORT ACID ANTHRAQUINONE BLUE RXO.

In a recent pamphlet, Newport Chemical Works, Inc., Passaic, New Jersey, pointed out that the outstanding features of their new product, Newport Acid Anthraquinone Blue RXO, are its excellent level dyeing properties, its fastness to light, fulling and perspiration. They also said that it is an excellent color to use by itself or in combination.

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BOOKLET ON ROLL LEATHER.

"After all, Nothing Takes the Place of Leather for Top Rolls," is the title of an interesting folder being distributed to spinning mill executives and roller covering shops by Gill Leather Company, Salem, Mass., manufacturers of sheep skin for top rolls. An unusual feature of the pamphlet is that it contains samples of Gilleather sheep skin, sufficient to make two coats. Instructions as to the application of the leather are given.

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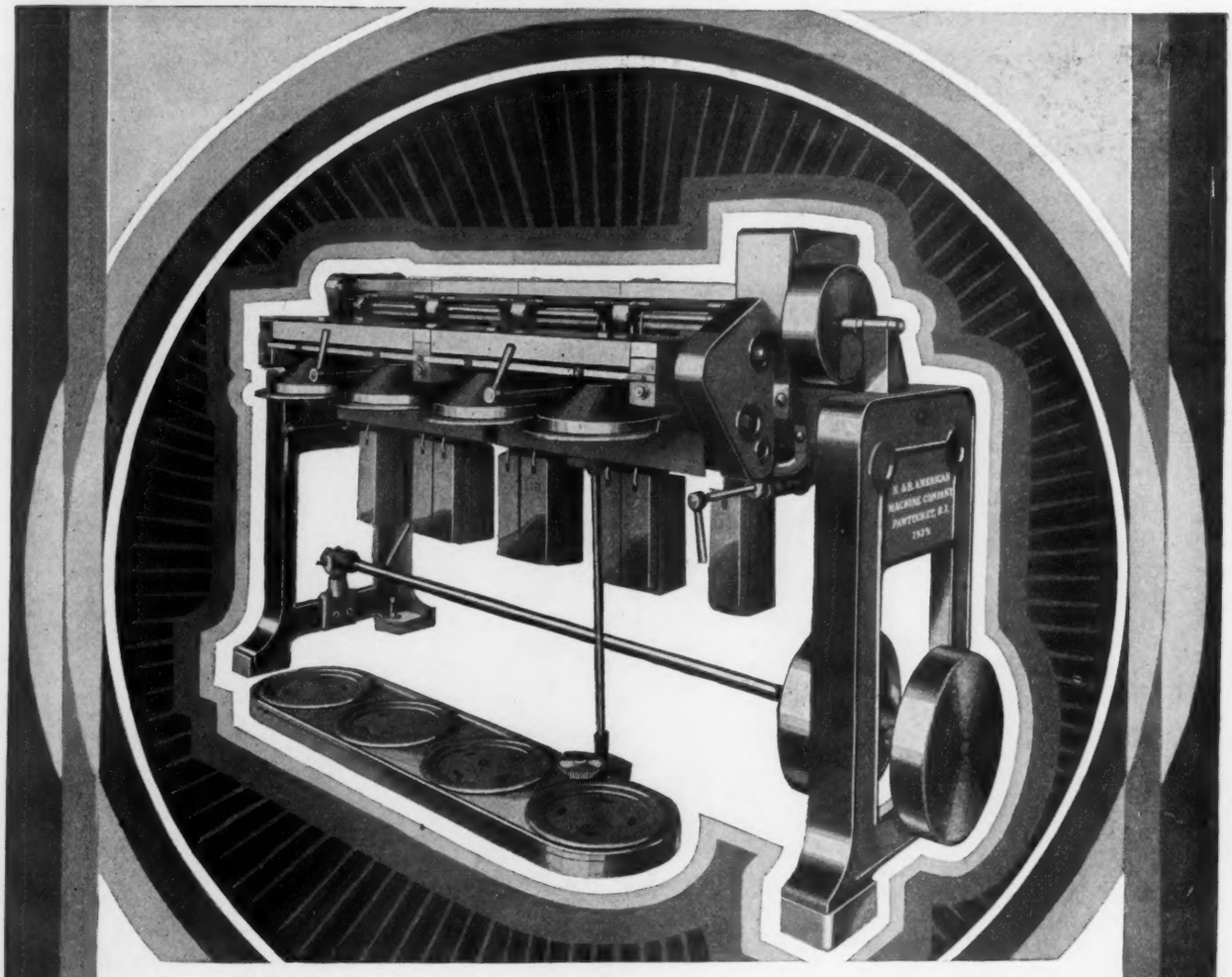
NEW DYESTUFFS PAMPHLETS.

E. I. Du Pont De Nemours & Co., Wilmington, Delaware, recently issued pamphlets E 4118, E 422 and E 423, which give the dyeing and fastness properties of Pontachrome Blue Green V, Sulfogene Brown DBR, and Sulfogene Navy Blue 4R, respectively. The pamphlets also contain samples of yarn dyed with these dyes.



H & B DRAWING FRAMES WITH ELECTRIC STOP MOTION

The Drawing Frame is the most important machine employed in the cotton spinning trade for parallelizing the fibres and regularizing the slivers. To prevent the formation of irregularities in the sliver during the drawing process, it is most essential to use a positive, Quick-Acting Stop Motion.

The H & B Electric Stop Motion meets every requirement for speed, reliability, and durability, and has proved to be an outstanding development in textile machinery.

It is quicker acting, less complicated, requires no attention or adjustment, and makes less waste, all of which make for more economy and efficiency in the operation of H & B Drawing Frames.

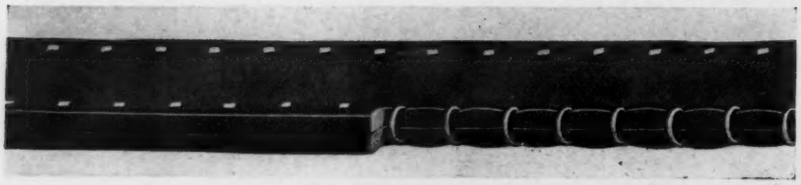
Production figures, names of users, and descriptive bulletins, sent upon request.

H & B AMERICAN MACHINE CO.

PAWTUCKET, R. I.

Southern Office: 814 and 816 Atlanta Trust Co. Bldg., Atlanta, Ga.

BUILDERS OF COTTON PREPARATORY AND SPINNING MACHINERY



Schieren "Static-Proof" Belt.

STATIC ELECTRICITY ON BELT DRIVES.

A permanently static proof belt has recently been developed in which a row of copper wire stitching along each edge makes contact with the pulleys at all times, according to Roy C. Moore, chief engineer of Chas. A. Schieren Company. In this way static charges which normally collect on the outer surafce of the belt are led off through the belt by means of the wire stitching, he says. He also points out that it is only necessary to see that the machines are well grounded to avoid any further danger from static charges.

He states that belting made in this way is permanently static proof and entirely eliminates the hazards of operating belt drives where the generation of static charges was formerly a source of danger.

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NEW LOOP PICKER AND LUG STRAP.

The E. H. Jacobs Mfg. Co., Danielson, Conn., recently announced as additions to their line of loom necessities, the new "Verybest" loop picker and the "Master Very Best" lug strap. The loop picker is shown in Fig. 1, while the lug strap is shown by Fig. 2.

The company states that the "Verybest" loop picker is designed for Northrop and Stafford looms with the idea of eliminating picker troubles.

Fig. 1. Loop Picker.

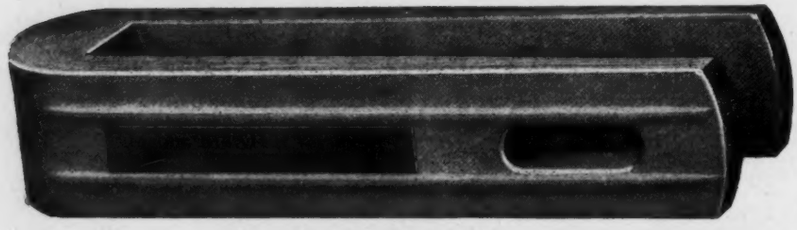

Fig. 2. Lug Strap.

According to the company, the big idea back of the new picker is the adaptation of Textolite as a component part of the pickers. They point out that Textolite is well known to the textile industry through its successful operation in the form of drop-box pickers and loom fitments, and that it is ideally suited for withstanding shuttle impacts and its use prevents the face of the picker from cracking open. The leather collar is solidly molded around the Textolite insert.

Among the advantages which the company claims for the new picker are: absolute uniformity in shape and quality; require no preliminary cutting or fitting; the Textolite insert resists shuttle point wear and prevents face of picker from splitting; Textolite insert provides a firm bearing surface on the face of the picker stick; exceptionally long life.

The company states that the "Master Very Best" lug strap is a molded product in which each layer of canvas assumes its equal share of the load. In order to eliminate the plug and rivet used in the old style lug, they say an extra surface has been built into the new "Master Very Best." They point out that the sides of the new strap are tapered with extra material at the point of greatest wear, and that the new construction provides a perfectly balanced strap.

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BOX CALF.

Color Card No. 715 of the Society of Chemical Industry in Basle, entitled, Box Calf contains sixty dyeings of Chrome leather with direct and acid colors and dyeings topped with basic colors.

NEWS ITEMS *with a Textile Slant*

TEXTILE YEAR BOOK AND SOUTHERN TEXTILE DIRECTORY.

The Clark Publishing Company, Charlotte, N. C., have issued the first edition of "Clark's Textile Year Book and Southern Textile Directory," which gives comprehensive information pertaining to the southern textile industry, southern textile mills, and allied subjects. The book contains the directory of southern textile mills, previously published in Clark's Southern Textile Directory," and this is amplified by considerable useful and pertinent information concerning the industry. A section is devoted to statistics covering the number of various types of mills in the South, including the increase in equipment in each division, such as full-fashioned machines, knitting machines, looms, spindles, etc., a list of the mills in the world by countries, and the mills in the South, classified; and also shows the spindle hours of the United States, the southern states, the New England states and the southern states individually, from 1922 to 1929.

Another section is devoted to useful information with reference to the cotton crop and ginning and distribution, as well as supply, spinners' takings, etc. A rayon section shows the United States production of rayon from 1926 to 1930.

Another department lists production, sales and shipments figures on various classes of textile products, and another section gives information as to the number of employees in cotton mills, labor laws of southern states, wages, etc.

The Year Book and Directory is issued in a cloth-bound cover, approximately 6x9 inches. The price is $4.00 per copy. It will be issued annually. The publishers will continue to issue the pocket edition of "Clark's Directory of Southern Textile Mills" twice a year.

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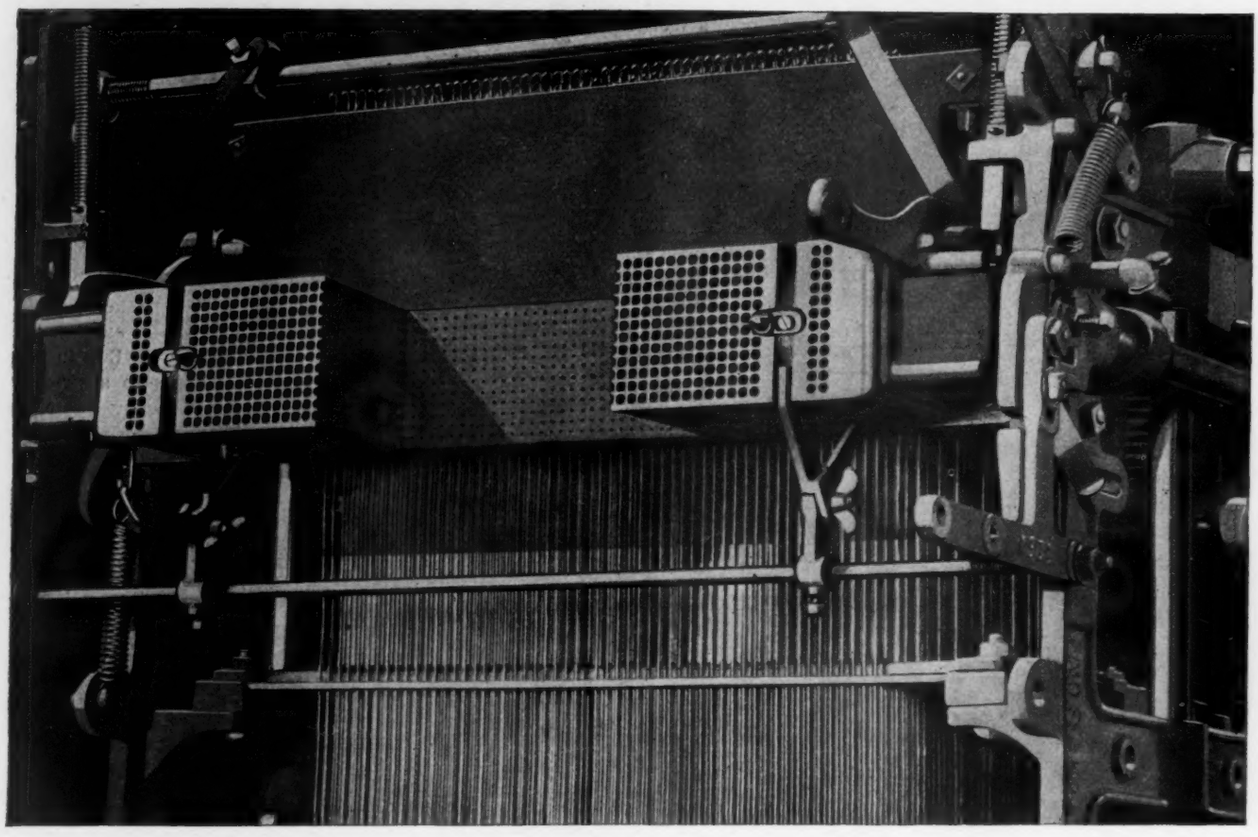
BOOKLET ON INDUSTRIAL APPLICATIONS OF CORK.

Armstrong Cork Company, Lancaster, Pa., who have been engaged in the



No excuse for needles to stick . . . when Halton's needleboards can be so easily cleaned. They're made in two parts, front and back. To clean, remove front section . . . the back keeps the needles in position . . . and the operation is quickly and easily performed. » » »

Simplification in operation and continuous performance gives satisfaction to the largest mills. Our new catalogue shows how. Write for it.

THOMAS HALTON'S SONS,
"C" AND CLEARFIELD, PHILADELPHIA.
SELLING AGENTS
H. A. FORBES, PATERSON, N. J.
THOMAS S. CAPPER, INC., CHARLOTTE, N. C.
FRED H. WHITE, CHARLOTTE, N. C.

manufacture of cork products since 1860, have just issued an interesting booklet entitled, "Industrial Applications of Cork." The book gives an historical sketch of cork, describing the means of securing the cork, and illustrates and describes many hundreds of industrial applications of this material. Among the textile applications described are: cork cots for cotton spinning and card room rolls; cork rolls for covering for drawing and spinning worsted yarns; cork roll covering for silk throwing; cork temple rolls for silk looms; gridded cork ribbon for covering silk loom take-up rolls; cork linings for loom break bands; cork friction facings for loom shuttle boxes; and cork friction discs for twisters. In a similar manner, the many other extensive industrial applications of cork are listed and discussed.

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SQUARE D COMPANY MERGES WITH DIAMOND.

The Square D Company, Detroit, Mich., manufacturers of electrical control and safety equipment, recently announced a merger of this concern with the Diamond Electrical Manufacturing Company, Incorporated, of Los Angeles, California. It is pointed out that this consolidation with the Diamond Electrical interests adds a very strong manufacturing and sales outlet on the Pacific coast. Under the new merger, the Square D Company will be controlled by the same executive personnel, with the addition of Vernon Brown and J. H. Pengilly of Los Angeles as vice-presidents. This is the second merger which the Square D Company has brought about in a little over a year. The Industrial Controller Company of Milwaukee, Wis., manufacturers of a complete line of automatic remote motor control equipment, was united with Square D early in 1929.

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NEW OIL SPRAYING EQUIPMENT.

The Union-Buffalo Mills Co., Fairmont, S. C., recently equipped their Fairmont division with an RX Model of Breton Minerol process oil spraying equipment, which places all the Fairmont division mills on oil spraying. This equipment was furnished by Borne Scrmyser Company of New York. The company announced that they had also placed their equipment in the Carlton Yarn Mills, Cherryville, N. C.

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FURTHER BOOKLETS BY FRANKLIN PROCESS

Franklin Process Company, Providence, R. I., have issued recently four additions to their series of booklets. They are as follows: No. 9, "What Price Fast Colors?"; No. 10, "Getting Your Money's Worth in Color;" No. 11, "How to Know Fast Color"; and No. 12, "Identification, the New Trend in Color." As described by the company, the purpose of the series is, "First, to save you time and money by standardizing the activities necessary in creating and ordering yarn-dyed fabrics and, second, to clear up the mystery that has often surrounded the subject of dyeing."

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BALDWIN-DUCKWORTH CHAIN CORPORATION.

An official announcement has been made of the merger of the Baldwin Chain & Manufacturing Company of Worcester, Mass., and the Duckworth Chain and Manufacturing Company of Springfield, Mass. The merged company will be known as the Baldwin-Duckworth Chain Corporation.

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HEMPHILL INSTALLS MACHINES IN NEW YORK OFFICE.

Immediately after the Philadelphia Knitting Arts Exhibit, Hemphill Company, makers of Banner Automatic Hosiery Machines, moved to larger quarters on the sixth floor of the Knit Goods Building, 93 Worth Street, New York.

The company is installing a complete line of machines in their New York office for testing and demonstrating purposes. For the benefit of out-of-town manufacturers visiting New York, these machines will be kept in operation under actual working conditions.

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NEUTRASOL OPENS CHARLOTTE OFFICE.

Neutrasol Products Corp., New York City, manufacturers of special products for sizing and finishing cotton and rayon, recently opened offices in the Cutter Building, Charlotte, N. C., to take care of southern business. This office is in charge of Louis M. Bowes, who has been connected with the dyestuff and finishing industry in the South and East for many years.

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HAZARD AGENCY OPENS OFFICE IN BOSTON.

Hazard Advertising Corp., which recently moved into new general offices in the Colonial Building, 295 Madison Avenue, New York City, have announced the opening of a branch office at Boston, Mass., in 950 Park Square Building. This branch is in charge of Theron S. Curtis, who joined the Hazard organization several months ago. Mr. Curtis, a graduate engineer, was a specialty engineer for the American Steel & Wire Co., Worcester, and for ten years was president of the R. I. Smith Co., manufacturing jewelers of Boston. In accordance with their policy of placing only sales trained men as account executives, the Hazard Agency has put Mr. Curtis in charge of contact work in the Boston territory, and contact work only is handled from this branch.

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EIGHT SHUTTLES?

The Stafford Company, Readville, Mass., in their recently published pamphlet, entitled, "8 Shuttles?" answered the question "Can 8 Shuttles Run in a Loom Without Trouble?" In answering the question, the company states that they have solved the problem of interchanging shuttles in a loom, not merely by accidental discovery, but by years of experiment and development. They say that in proof of this fact they have a loom set up in their weave shop, running every day, and using a set of eight shuttles which vary in weight as much as one whole ounce and in width as much as 25/1000 of an inch, which is running very satisfactorily.

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NEW INSTALLATION.

The Sibley Manufacturing Company, Augusta, Ga., recently installed a Hermas Shearing Machine, purchased from Hermas Machine Company, at Hawthorne, N. J., through their southern agents, Carolina Specialty Company.

Rosemary Manufacturing Company, of Roanoke, Rapids, N. C., have also installed a Hermas shearing machine, as well as a Hermas brushing machine, purchased from the Hermas Machine Company.

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CONTINUOUS HYDRO-EXTRACTING MACHINE .

C. G. Sargent's Sons Corporation, Graniteville, Mass., recently published Circular No. 159, which illustrates and gives information concerning their continuous hydro-extracting machine. In the circular the company states that the outstanding advantages of this means of extracting liquids from saturated fibers, include the following:

(a) An even continuous flow of production into and through dryer, thus permitting maintenance of drying temperature with uniform drying results. (b) Fewer "bunches" of stock and consequent greater ease of air in dryer to penerate, than through stock matted" by a hydro-extractor. (c) The natural results of continuous as compared with intermittent action. (d) Reduced danger hazard. (e) Saving in power. (f) Ease in operation. (g) Greater production with less labor.

TEXACO LUBRICATION GAINS 600%

TEXACO Lubricants, today, are used on nearly 50 per cent of all the spindles operating in the State of South Carolina.

This *is a gain of nearly six hundred per cent* in the number of Texaco lubricated spindles during the past four years alone.

The overwhelming increase in the use of Texaco Lubricants on the spinning frames of South Carolina, and of other textile centers throughout this country, is the response of mill operators to the proved effectiveness of Texaco Lubrication.

Operating executives, with the cooperation of Texaco Lubrication Engineers, have demonstrated conclusively the substantial power saving, which is the evidence of wear reduction, accomplished through these remarkable lubricants. Write The Texas Company on any question connected with textile mill lubrication. There is a Texaco Lubricant for every purpose.

TEXACO LUBRICANTS

THE TEXAS COMPANY
135 East Forty-second Street, New York City

NOTES ABOUT MEN YOU KNOW OR KNOW ABOUT

A. Culberson, for several years vice-president and general manager of the Texas Textile Mills, Inc., with headquarters in Dallas, Texas, and plants there and at Waco and McKinney, last month resigned his position with this concern.

Willis E. Johnson, Jr., who for the past year has been connected with the Columbia Mills, Columbia, S. C., a division of the Mount Vernon-Woodberry Mills of Baltimore, Md., has been appointed assistant superintendent of the Columbia Mills.

Bruce Griffin has been appointed district sales manager for the Piedmont district and adjacent states, for the Industrial Rayon Corporation of Cleveland, Ohio. Mr. Griffin's headquarters are in Charlotte, N. C. The company states that this move was made as a result of the increasing consumption of rayon by the mills in this district. Mr. Griffin has been with the Industrial Rayon Corporation for several years, and brings to the territory a well rounded knowledge of the manufacture and use of rayon. His new work will supplement that of the regular territorial representative, who will continue to call on the trade.

Bruce Griffin.

C. S. Hodges has been made second hand in day carding at the Chadwick-Hoskins Mill, Charlotte, N. C.

Irby M. Goree, formerly night superintendent of the Whitmire (S. C.) plant of the Aragon-Baldwin Cotton Mills, Inc., recently resigned.

W. D. Jenkins, who has until recently been designer at the Judson Mills, Greenville, S. C., has resigned to accept a similar position at Bath, S. C.

J. P. Hill has resigned as superintendent at Wildman Mfg. Co., Cherryville, N. C.

N. A. Long, chief chemist for the plant of the Beacon Mfg. Co., Swannanoa, N. C., was recently transferred to the plant of the same company in New Bedford, Mass., and will be in charge of dyeing.

E. W. Martin has been placed in charge of the Pennsylvania territory for the Tubize Chatillon Corporation, manufacturers of synthetic yarns. Mr. Martin was formerly representative in the same territory of the Nyanza Mills, Woonsocket, R. I. Mr. Soutar of the Tubize Chatillon Corporation will continue in the territory as heretofore.

Paul M. Sinclair, superintendent of the Winfield plant of the Alabama Mills Co., Winfield, Ala., was recently transferred to a similar position at the Haleyville (Ala.) plant of the same company.

A. P. McAbee recently resigned as overseer of weaving at the Pilot Division of the Consolidated Textile Corp., Raleigh, N. C., to accept a similar position at the Caraleigh Mills Co., of the same place.

W. T. Morton, formerly head of the spinning department at the Middleburg Mills, Inc., of Batesville, S. C., has accepted a similar position with the Aragon-Baldwin Cotton Mills, of Rock Hill, S. C.

Warren H. Pearman, formerly overseer of twisting at the Aldora Mills, Barnesville, Ga., is now with Mill No. 3, of the Goodyear Clearwater Mills, Atco, Ga.

V. Phillips was recently made superintendent of the Aponaug Mfg. Co., at West Point, Miss., succeeding W. T. Jeffries, who resigned.

Arthur James Cumnock, for many years a very prominent figure in the cotton goods industry, died suddenly at his home in New York on June 8. For years Mr. Cumnock was president of Catlin & Co., Inc., and after consolidation with Farish Co., Inc., last March he was made president of the newly formed Catlin Farish Co. At the time of his death he was also president of the American Spinning Co., the Catlin Yarn Co., Inc., and the Florence Mills Co.

W. M. McLoud, formerly superintendent at Neely Mfg. Co., and Travora Cotton Mills, York, S. C., is now superintendent of the Rhyne Hauser Mills, Cherryville, N. C.

W. E. McKinney, formerly overseer of spinning at the Peerless Mills, Thomaston, Ga., is now filling a similar position at the Elberton (Ga.) Cotton Mills.

R. L. Basinger, overseer of weaving for the past five years at Suncook, N. H., has resigned to accept a similar position at the Androscoggin Mills, Lewiston, Maine, a position he formerly held.

W. L. Carmichael, a graduate of the A. French Textile School of the Georgia School of Technology, Atlanta, Ga., was awarded the degree of Master of Science in Textile Engineering, at the recent commencement exercises following graduate work at the institution. This is the first M. S. degree to be awarded in textiles at the institution. Mr. Carmichael is a member of the textile school faculty.

R. L. Lee received the award of Master of Science in Textile Manufacturing at the commencement exercises at the North Carolina State College, Raleigh, N. C.

Robert Edward Smith, Jr., of Fairfax, Ala., was awarded the medal given annually by the National Association of Cotton Manufacturers to the member of the graduating class showing the highest excellence in his work during his four-year stay in college at North Carolina State College; **Duncan Cameron Turrentine, Jr.,** of Greenville, S. C., received this same award at Clemson College, while **Thomas J. Culpepper, Jr.,** was the recipient of the medal at the A. French Textile School of the Georgia School of Technology.

Brumley D. Pritchett won the medal offered by the Cotton Manufacturers' Association of Georgia to the four year textile student having the highest scholastic standing for his four years in college at the Georgia School of Technology, which was presented at the recent commencement exercises. **R. Wright Cannon** was awarded the medal given by the Textile Operating Executives of Georgia to the two-year student having the best scholastic standing at the time of graduation. Both of these medals are given annually by the two aforementioned organizations.

LESTERSHIRE SPOOLS ARE SURE PROTECTION AT THE VITAL POINT

EVEN tension where the yarn unwinds . . . no stretches, breaks, thin spots or bunching. ¶These mean lowered production costs . . . and quality fabric. ¶*True Spools* . . . spools of exquisite precision . . . Lestershire Spools feed off the yarn at perfect, even tension. Lestershire Spools are your positive protection at the vital point . . . a really substantial economy. *Satisfaction Guaranteed.*

LESTERSHIRE SPOOL & MFG. CO.

146 Baldwin St.
Johnson City
New York

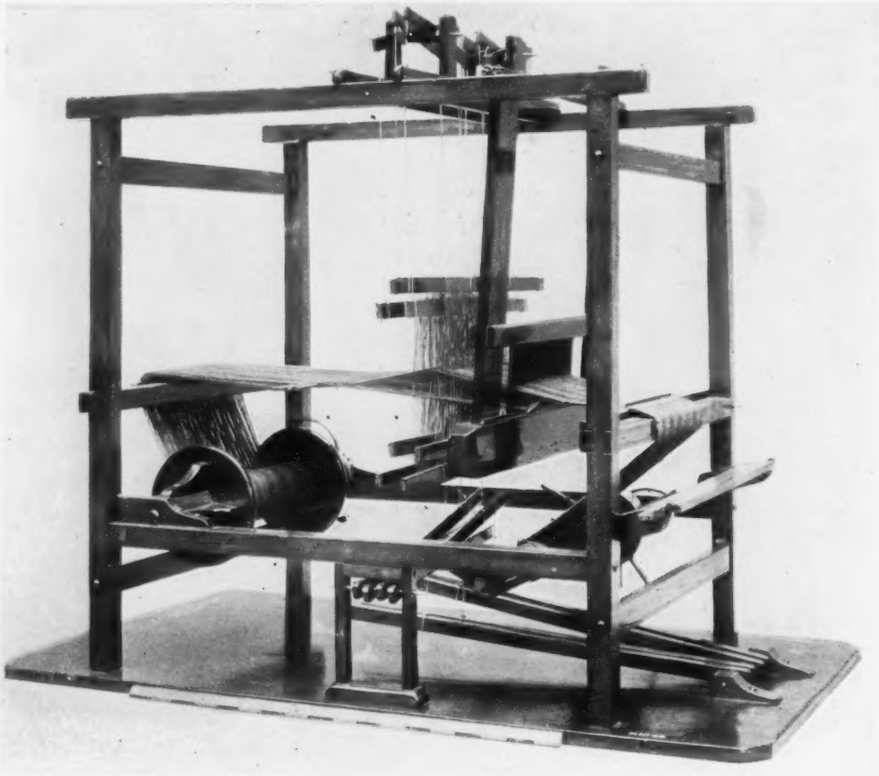
Southern Office
519 Johnston Bldg.
Charlotte, N. C.

Pictorial History of Textile Machinery

By Prof. Chas. E. Mullin, D.Sc.
Clemson College Textile School,
Clemson College, S. C.

PART VII

(Editor's Note: This is the seventh of a series of features in which illustrations of the earlier models of regular textile machinery, together with brief descriptions, will be presented. The photographs and information were secured by Dr. Mullin on a recent trip to Europe. It is felt that these interesting photographs of old machinery will be suitable for filing or framing by the reader.)



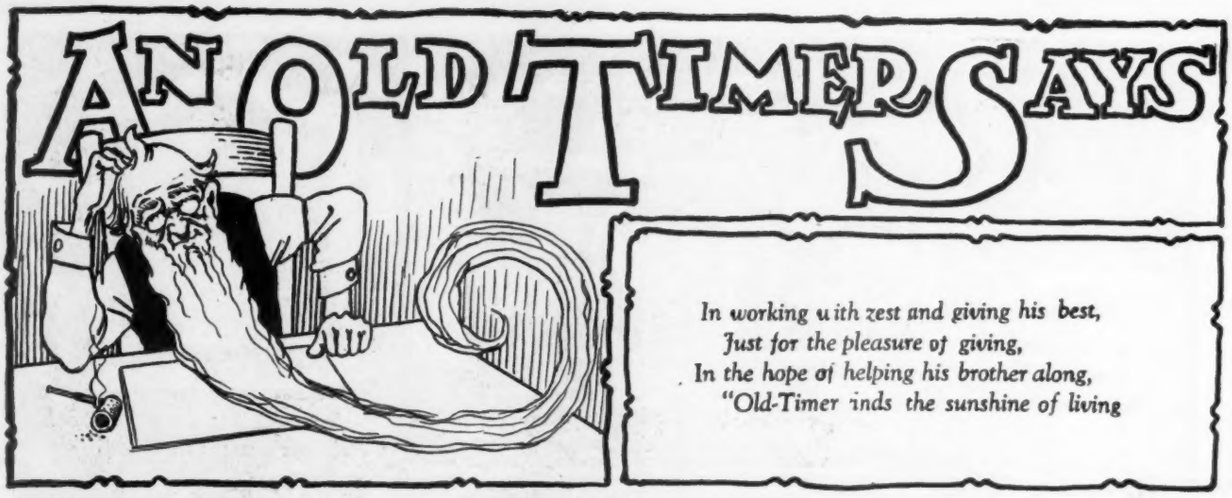
Model of Hand Loom.

THIS MODEL represents the general form of hand loom in use prior to the invention of the fly-shuttle in 1733. Most of the features of the modern power loom are, however, to be found in this loom in an elementary form, and in a state that renders the action of the later developments more evident.

The warp threads are wound on the warp beam at the back of the loom frame, from which each one passes through an eye in a separate vertical heald and then between a reed to the cloth-beam. The healds of alternate warp threads are secured above and below to heald-shafts, which can be moved vertically by treadles, and the healds of the intermediate warp threads are similarly controlled by another set of heald-shafts. By this means the alternate threads of the warp can be moved so as to form the shed, through which the shuttle, containing a supply of the weft thread, can be pressed by hand.

After each passage of the shuttle the healds are so moved as to reverse the relative positions of the two groups of warp threads, thus securing a complete interlacing of the two systems of thread. The weft thread is at the same time driven close up to the preceding thread by the reed, which is pulled forward to beat it up.

The loom is represented weaving a stair carpet, with longitudinal stripes given by the use of warp threads dyed in different colors. Three threads are pressed through each loop of the healds and the weft thread is quadruple. The original is in a British museum.


AN OLD TIMER SAYS
In working with zest and giving his best,
Just for the pleasure of giving,
In the hope of helping his brother along,
"Old-Timer finds the sunshine of living

How Can I Earn More Money for My Firm?

Here are given some very practical suggestions particularly with regard to analyzing labor turn-over and conditions in the village, which will be of especial value to mill men in the southern section of the country where practically every mill operates its own village, and is faced with the expense in figuring his cost.
—THE EDITOR.

JIM HAS BEEN sitting there chewing his cud for a long time. He thinks he has been spitting out into the yard, but if you have ever seen one of these darn humidifiers sprinkle a little dab of water on the floor at every stroke of the pump, well, that's the way the floor looks between where Jim sit and the edge of the porch. His spitter sort of drags a little, or doesn't cut off just right or something —anyway, you know what I mean.)

"Say, OLD-TIMER*! Wouldn't it be fine to be rich, just to have all the money you wanted, ride around in a big fine car, go to all these here textile meetings and things, have all the good tobacco you could chew, and fried chicken, and big juicy steaks, and not have to get up in the mornings to make the fire in the stove and —"*

"Wait a minute, Jim. How long have you been asleep? You are just dreaming, that's all."

"Well, it's doggone sweet to dream sometimes, isn't it, OLD-TIMER*?"*

"Yeah, Jim, and the dreaming is far sweeter than the realization of the dreams for most of us."

"How's that? You mean to tell me it is more pleasure to dream of being rich than to be rich?"

"Yes and no, Jim. You see our biggest trouble, that is the biggest trouble of men like you and me and the great majority of human beings, we can't see over the fence, so to speak. We can't see what the realization of those dreams would bring us. We only think of the pleasant side. We cannot see the unpleasant side."

"Where is the unpleasant side of being rich, OLD-TIMER*? Is it not a fact that you are trying to save your nickels in the hopes of acquiring something for the future?"*

"Sure, Jim, and that is what I have preached all these many years, that every man should do, but as for acquiring riches, that is, to be a really rich man, that is something else. I claim the really rich man does not enjoy life as much as the average well-to-do man, the man who accumulates enough to keep the wolf from the door in case he gets out of a job or old age creeps up on him so he can't work.

"But everybody is interested in acquiring money, or they should be, and there are several ways of achieving that result. Some people steal it, but it never seems to bring them much happiness. Some are what we call just lucky, some have it given to them by some relative who has worked like the dickens for it, and they, like the ones who steal it, don't seem to hold on to it very well, so I have about decided that the only certain and sound way is to work for it, to earn it. That is the way to really get happiness out of it, and about the only way I have ever found out for a man to earn money is to earn it for somebody else—"

"How's that, OLD-TIMER*?"*

"Hold on, Jim, let me finish—

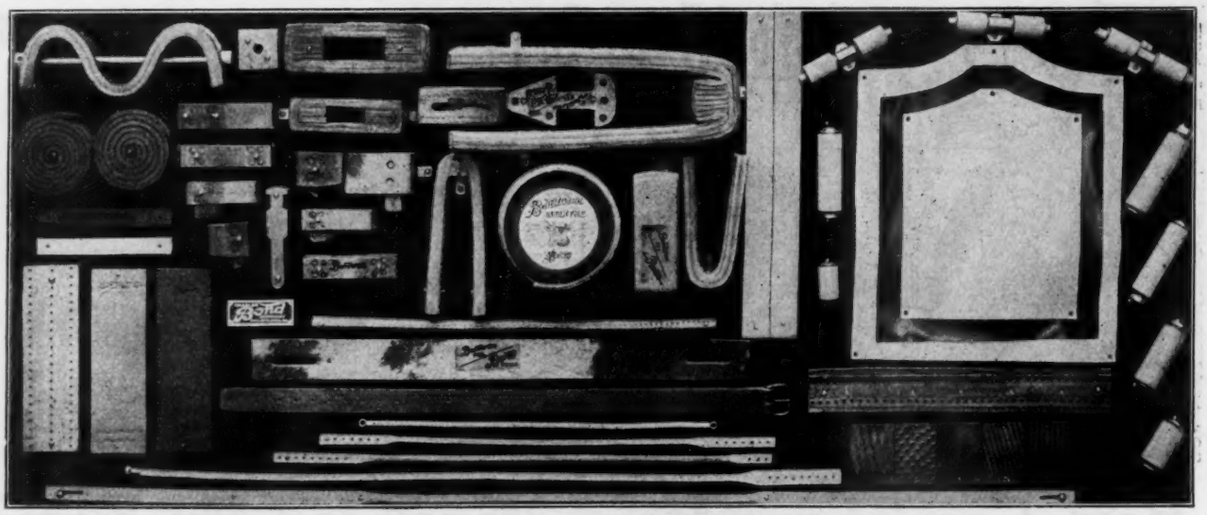
and part of what you earn for somebody else is then paid to you. The more you make for your employer, the more that employer can afford to pay you."

"But—"

"Don't interrupt me, Jim, I'll let you talk later. Then take you, for example, Jim. Old man B paid you $3.00 a day for running that little card room, didn't he? Well, you made him money by running your job better than the other fellow had run it, and he gave you the spinning when the spinner quit, and paid you $4.50 for the two jobs."

"Yeah, OLD-TIMER*, but he made money out of that. He was paying the spinner* $3.00 *and he only gave me* $1.50 *more to run both jobs."*

"But, Jim, do you suppose he would have given you the spinning if you had not made him such a good man



When Performance Counts - Use ORIGINAL and GENUINE "The Leather with the Hair on" Bondaron REG. U.S. PAT. OFF. Textile Leathers

Buying by comparison is a safe method, but too often the comparison is based on first cost rather than by *results*. Economic value can only be ascertained by actual use when the record of performance provides enlightening comparisons.

Men, methods and machines differ. That is why Charles Bond Company is always willing to submit Bondaron Textile Leathers to intensive, practical demonstration under any mill condition where textile leathers are used.

Bondaron Textile Leathers are performing feats of endurance and economy in many leading textile mills. Working samples will gladly be sent, without obligation, to any interested, responsible firm.

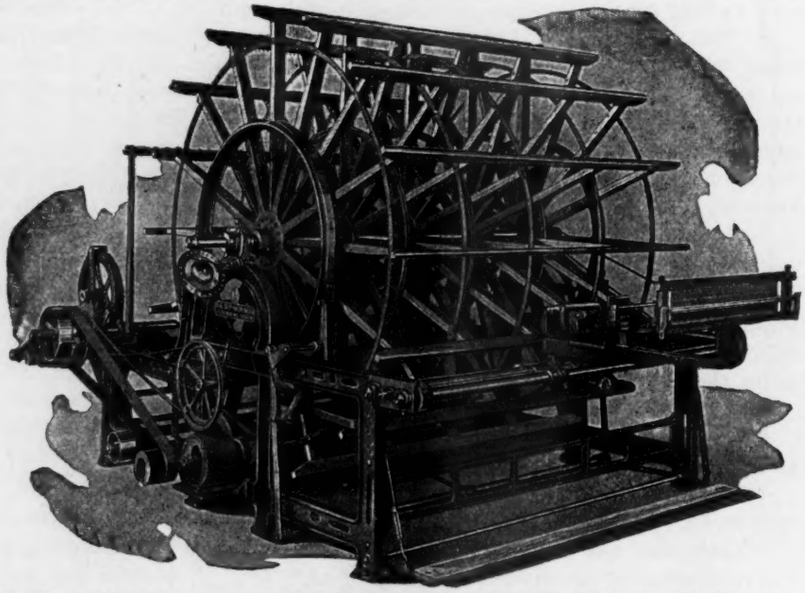
CHARLES Bond COMPANY

Leather Curriers and Manufacturers *of Belting and Textile Leathers*

617-623 Arch Street Philadelphia, Pa.

Two Staffs of Designers Spent 30 Years Perfecting This Warper

ITS A TRADE MARK SIPP EASTWOOD



FOR more than 30 years the Sipp Machine Company and the Benjamin Eastwood Company experimented and worked to develop a perfect warper. Their efforts are reflected in the present Sipp-Eastwood machine, which is the last word in heavy warper construction—the natural result of nearly 30 years' experience of the combined staffs of these organizations.

The largest silk houses in this country—users of this machine—bear witness to its superior design and performance.

SIPP-EASTWOOD CORPORATION

Also Manufacturers of latest type
Horizontal Silk and Rayon Warpers of various sizes
Rebeamers Folding Machines Quillers
Edge Warpers

Keen and Summer Sts., Paterson, N. J.

REPRESENTATIVES:

NEW ENGLAND
Joseph Barnes
New Bedford, Mass.

SOUTH
Carolina Specialty Co.
Charlotte, N. C.

ENGLAND:
Textile Accessories, Ltd., Manchester, England.

in the carding that he believed you could run both jobs?"

"No, he would not have taken that risk just to save $1.50 *a day."*

"Then your experience as carder and spinner was the direct cause of your getting the large card room at $50.00 a week, and so on with each advancement you have had for the past 20 years.

"I'll tell you it is a fact that the way, the surest and best way, for a man to earn more money for *himself* is to earn more money for his *employer*. Therefore, I want to give you a few pointers to go home and take up with your men at your next overseers' meeting.

"First, every overseer's thought each day should be: How can I earn more money for my firm? And don't forget, Jim, that to find a way to save a dollar is oftentimes equivalent to making two dollars.

"Second, how can I produce more and better product with less man hours?

"Third, how can I run my job with less money spent for supplies? (goodness, aren't those supply bills awful?)

"Fourth, how can I teach my operatives to make less waste, less seconds, less bad roving and less tangled yarn?

"Fifth, how can I get my employees to see this problem as I do?

"Sixth, how can I get them to see that the best families in all mill villages are the families which have stayed at that one mill and not only have won the confidence of the mill officials, but have become the backbone of the village?

"Just go through any village, Jim, and look in the houses and you will see the families which have been there several years. They have the best furniture, along with the radio, a flivver and it paid for. Drop around to the bank and you will find a little savings account to the credit of most of these old families.

"Now go back in the mill and you will find they are the workers upon whom the overseers can depend upon to be there every day. They have got the best set of looms, of frames and so on, because they have stayed there and done good work.

"Now the point I am leading up to is this: Suppose you and your overseers can find a way to add one more family to this list, think of the money you have made for your company, think of how you have made your job easier. In the average mill village you will find 60 to 70 per cent of the workers are in this class, and that out of the remaining 30 or 40 per cent, you will have as much as 200 and oftentimes 300 per cent turn-over.

"Wait a minute, now, Jim, don't you go out and say that OLD-TIMER said a mill village would have 200 per cent labor turn-over. I did not say that at all. What I said was that there is practically no labor turnover for 60 to 70 per cent of the operatives, but the remaining 30 to 40 per cent does turn over beyond all reason, and if you can find a way to get some of these families, which are in the turn-over class, into the non turn-over class, you will have done a big day's work.

POPULATION		Nº OF FAMILIES WHICH HAVE BEEN HERE	
Nº OF MALES		LESS THAN ONE YEAR	
Nº OF FEMALES		1 YEAR	
TOTAL		2 YEARS	
WORKERS		3 YEARS	
Nº MALES		4 YEARS	
Nº FEMALES		5 YEARS	
% MALE WORKERS		LONGER	
% MALES TO POPULATION			

"Here is a record, Jim, of one mill village for eight years, and it shows that 65.6 per cent of the families have been in that same village over five years. That is what I call a good record, and in that 65.6 per cent there are many families which have been there 10 and 15 years. In fact, about half the 65.6 per cent have been at that mill *over* five years.

"Most mill villages in the South average 65 to 70 per cent male workers. That is, taking a village house-to-house census, the male workers will average about 65 to 70 per cent, and the whole population will show 40 to 50 per cent workers. You see, the average family where there are two or three workers will have the housekeeper and two to four children not old enough to work."

"Gosh! OLD-TIMER, *you have given me a thought. I am going to have a house-to-house canvass made of our village and see how it checks up with all this information you have given me."*

"That's a good idea, Jim, and let me suggest that you arrange your record so that when you have canvassed every house in the village, you can compile information which will show you:

"The number of males and the number of females in the village population.

"The number of male workers and the number of female workers.

"The percentage of male workers and the percentage of males to population.

"The number of families which have been in the village less than one year, one year, two years, three years, four years, five years. and longer. (In order to see how this form might be prepared, the reader is referred to the illustration at the top of this page.—The Editor.)

"Now, Jim, take your total number of rooms and divide it by the total workers, and that will show you the rooms per worker, and let's you know whether you have spread your house room out too much. Some engineers are allowing two rooms per worker, when they build a village, but a print cloth mill should run with 1.5 to 1.75 rooms per worker, and since good roads and flivvers have arrived, it should be possible to get along with less house room than that.

"But don't forget, Jim, that all of this talk has had but one idea behind it, and that is to find a way to earn more money for your firm, and it is my honest opinion that if you can get a few families out of the one-year class into the five-year class, you will certainly be making money for your company, because the turnover is one of the most expensive things we have."

Courage in Business

ALL MODERN industrial and mercantile expansion depends upon *Courage*. It explains progress. It determines the limits of individual success. It is the physical expression of confidence and belief.

Business moves forward only so far as it is led by men with the vision of new conditions, new ideas, new forces, new methods—*and the courage to put them through*.

Companies lacking this leadership are left behind after every period of inflation.

Courage is not governed by conditions; it controls conditions. It not only recognizes, but *corrects*, weak organization, backwardness, inefficiency.

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"Where the gins had the up-to-date systems they were able to eliminate the foreign matter to such an extent that it made the cotton merchantable, whereas when the farmers carried the cotton to gins without this special equipment there was so much foreign matter left in the lint as to make it unmerchantable in the majority of the cases. The loss to the farmers in not going to the new system gins was very heavy indeed, sometimes going to $25.00 per bale."

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HOW OTHER MEN MANAGE

Practical Discussions by Cotton's Readers On all varieties of Mill Subjects

What Causes the Roving to Break Back in Spinning Frame Creels?

This may seem to be a simple question, but study it, and give us your answers. It suggests some interesting discussion.

EDITOR COTTON:

Here are some questions I would like to see discussed in the "HOW OTHER MEN MANAGE department of COTTON, and I hope some of your readers will answer them.

Assuming that the spinning creels are level, and that the skewers and other points are all in good shape, what are the main causes of roving breaking back in the creels on spinning frames? I would like to have the experiences of a number of readers as to what are the major causes of this trouble, and also their explanations as to how these may be prevented or remedied.

In answering, please give the grade and staple of cotton used, and the size of hank roving used on the spinning frame, whether single or double, and the number of yarn. Also state whether spinning is regular draft or long draft. If anyone has the figures, on any yarn number or hank roving, I would like to have information as to the total number of ends down per thousand spindles per hour, and the percentage of these ends down caused from break backs in the creel.

I hope your readers will go fully into the possible causes of break backs, and give the figures requested, if possible, together with the other information asked for.

CONTRIBUTOR No. 4775.

Which Puts Twist in Yarn—the Traveler or the Spindle? When Does the Traveler Move the Fastest?

All right, here it is again. We invite all readers interested to present their views on these questions. Be sure to tell why what you say is so.

EDITOR COTTON:

I have two questions on which I shoud like to see some practical discussion in your "HOW OTHER MEN MANAGE" department. They may seem to be simple and elementary, but I believe there are many who would be glad to read the comments of your contributors on them.

First, what puts twist into the yarn on the spinning frame, the traveler or the spindle? If it is controlled or placed into the yarn by these jointly, which one of them has the greatest portion of the work to do?

Second, when does the traveler move at the fastest rate of speed, when the quill or bobbin is empty or full? If there is a difference in the speed, how much, and how can it be determined?

I would like very much to see some comment on these two questions, and any other subjects which they might suggest, in the columns of COTTON.

J. R. (GA.)

We invite our readers to make use of this department for the discussion of any and all problems arising in the mill or the finishing plant. Questions, answers or letters need not conform to any particular style and will be properly edited before publishing. The editors do not hold themselves responsible for any statements of opinion or fact which may appear in this department unless so endorsed. This department is open to all.

Moisture Content in Bales and Laps.

This man makes some interesting observations as to the effect of this rather important matter in connection with even numbers.

EDITOR COTTON:

In the May issue of COTTON, on page 761, you published a report of the discussion on card room subjects, at Clemson College, and I am accepting the invitation you expressed in an editorial note, to comment upon the very interesting discussion of moisture content in bales and laps included in this meeting.

The question asked by J. O. Corn, as chairman of the meeting, "What difference does it make how much moisture content you have in cotton?" was well answered by Marshall Dilling, who called attention to the fact that the mill product is sold with six or seven per cent moisture regain, and if the raw material has more than this, the difference is a dead loss to the mill.

This is a large part of the vexing "invisible loss" which is so difficult to trace. A five per cent "invisible loss" variation is a tragic affair in a coarse mill, making a narrow margin of profit on a quick turn-out of raw material into finished goods. Yet wet bales can cause a five per cent "invisible loss."

Anyone who has traveled much through the South has noticed the immense amount of cotton left exposed to the weather. Those who grow and handle this cotton have become accustomed to this careless manner of husbanding a valuable crop, but it is a very striking sight to a stranger. I remember talking several years ago with a Maine mill agent who had just taken a long motor trip through the South. He said that the thing that impressed him more than anything else on his trip was the way the cotton was

handled.

He pointed out that at his plant they handled the cotton with the utmost care, being careful to protect it from getting wet, and picking up every bit of lint that was torn off of poorly wrapped bales. The rule of the mill required all cotton to be kept under shelter, and a yard man who left cotton standing overnight on an open platform would be fired.

Yet, in the South, he saw thousands upon thousands of bales piled up in farmers' yards, lying on the bare ground, and with no protection from rain. In every town, there were cotton platforms with dozens or hundreds of bales exposed to the weather. This made more impression on this man than anything else on his trip through a new country.

And this practice of poorly caring for cotton is responsible for immense losses to mills, as well as cotton merchants. Cotton is bought by the merchant on the basis of the weight as given by the official county cotton weigher, or by warehouse scales, and represents the weight of actual cotton, plus all the rain and ground moisture that the highly absorbent fiber would take up.

From the time the merchant weighs this cotton, until it reaches the mill, there will be a loss in weight, due to drying out, but tightly-baled cotton does not dry readily, and there will be another loss when the bale is opened and processed.

The mill pays on the basis of what the cotton weighs when received, and the merchant takes a loss on discrepancies. Any loss after this, is the mill's loss. This may run about two to three per cent on a year's supply of cotton. I do not know of anyone who has reliable data on a whole year's cotton, but from data I have seen, a loss of three per cent seems conservative. This means that the mill is taking a dead loss of three per cent of the invoice value of this entire supply of cotton.

This is a serious loss, and it would seem that if more mills would do research work in determining the actual moisture content of cotton, and more open discussions of the problem, like the one at Clemson could be held at future meetings of mill men, that steps could be taken to create some standards of moisture content for buying cotton. Large numbers of users of textile goods have rigid regain standards, and pay only for the net weight of the material when adjusted to a fixed regain basis. It seems that cotton should be bought and sold on the same basis.

The manufacturing problems caused by damp bales of cotton are not so serious, provided the mill has good opening equipment. With an efficient opening room, so much air has been blown through the cotton that it has dried down considerably by the time it reaches the breaker hopper, and in going through the pickers it will come almost exactly to the regain warranted by the atmospheric condition of the room. Each picker fan draws a large quantity of air over the finely divided lint on the screens, and this dries the cotton almost as fully as the condition of the air permits.

W. A. L. Sibley, of Whitney, gave some figures on this at the Clemson meeting, showing that very damp cotton in the opening room came down rapidly in moisture content as it went through the pickers. I quote from his remarks in this connection:

"Some years ago we made some basic tests * * * as to how fast the cotton will lose or gain moisture. It doesn't make any difference how much moisture it starts off with, but depends more upon the humidity in the picker room at the time. You may have 13 per cent to start off with, and it is a dry day; by the time the middle of the bale is down in the picker room, the air passing through the screens will change it to within two per cent of the amount of moisture the regain tables call for at the relative humidity then existing. On a rainy day, when you may have 80 per cent relative humidity, that cotton, according to our experience, will not take up the regain, but will lag about two per cent, and it will do that to about 50 per cent relative humidity. Then when you get down to around 25 or 30 per cent relative humidity it lags in the opposite direction, and the cotton may start off with 6 per cent—30 per cent relative humidity calling for about 3 or 4 per cent moisture—and it will have around 5 per cent moisture actually in the cotton. When you go in between those marks your cotton becomes sluggish. If you look at the regain tables you will see it should have a certain percentage of moisture, but you must take care of that lag."

Continuing to quote from your report, on page 762, I quote Mr. Corn:

"Well," said the chairman, "say you start off with 9 per cent. Today you might have 40 per cent in the picker room, and tomorrow you might have 70. How much of that 9 per cent is it going to lose with a room condition of 7½ per cent."

"It will go down to around 7," said Mr. Sibley. "If in that picker room you had a regain of 4 per cent moisture, and you started off with 9, it would come down to 5 per cent, and it would do it by the air passing through the screens in the pickers." This is not in a regulated picker room, he added.

Tests of my own show even a greater drying effect than Mr. Sibley's results, but the time of the year has a great deal to do with this. In hot weather the drying will naturally be more rapid than when cold air is drawn through the cotton. Then, another little-considered point, is the fact that green cotton, ginned immediately after picking early in the season, contains a certain amount of natural vegetable moisture, or sap. This appears as ordinary hygroscopic moisture in a bone-dry test, but is really a different proposition, as this moisture dries much more slowly than ordinary hygroscopic moisture.

Moisture taken from the air by thoroughly cured cotton, will dry out very quickly, and cotton from which the sap is gone will generally lose almost all excess moisture by the time it gets in the finisher lap. Any tests conducted in the fall, however, must allow for the slow-drying sap in the fiber.

The most serious manufacturing problem due to moisture variation in cotton is that caused by the normal changes in natural atmospheric humidity. There will be damp days, when the natural moisture in the laps will run around 9 or 10 per cent, and sometimes more than this. Then a dry spell follows,

and the moisture regain falls to five or six per cent. Naturally there is a variation in the weights of drawing and roving.

Three methods of overcoming this trouble were mentioned at the Clemson meeting. One method is to make bone-dry tests on drawing sliver and adjust from that. This strikes me as a very poor place to correct inequalities in the work. If the drawing sliver varies much, it is because the picker laps varied, and the proper place to start keeping even numbers is in the picker room. The experience of a lot of men who keep their numbers in the picker room has been that if the laps are carefully weighed with a proper adjustment for moisture regain, then the drawing and roving seldom or never needs any changing.

The other two methods offered were both picker room methods. One man used a regain indicator which reads directly the moisture regain in the cotton, and the other evidently calculated his regain from a psychrometer or hygrometer. Both of these men start in the right place—the picker room. In addition to the regain indicator and the relative humidity methods, some mills use the bone-dry tests on picker laps instead of the drawing sliver. Either the regain indicator or the bone-dry test will give more accurate results than the relative humidity calculation.

In fact, the bone-dry test and the regain indicator use an application of the same principle and give exactly the same results. The bone-dry method gives the *loss* in weight of a known weight of raw cotton when it is reduced to a bone-dry condition. The regain indicator gives the *gain* in weight of a known bone-dry weight of cotton when allowed to regain to atmospheric condition.

Both methods do the same thing, but reverse the process. The regain indicator has the advantage over the bone-dry method in that it gives the actual regain instantly, whereas it takes about an hour to make a bone-dry test, and the indicator requires no one to operate it.

The place to start keeping even work is at the first point where it is possible to maintain any definite uniformity, and that place is at the finisher picker. The methods to be followed in keeping even weights of laps may be a matter of opinion, but that this is the place to begin making uniform work is a matter of fact.

CONTRIBUTOR NO. 4790.

It is a strange fact that the majority of overseers and superintendents are pessimists about good running work in their *mills.*

I'll admit you cannot make the breaking strength go up by talking good running work, but it is darn poor policy to let your pessimism get into your help.

A mule can't kick and pull at the same time. Yes, anybody knows that of course. Then why in common sense do so many overseers and superintendents try to do the thing that they know can't be done—kick and pull at the same time?

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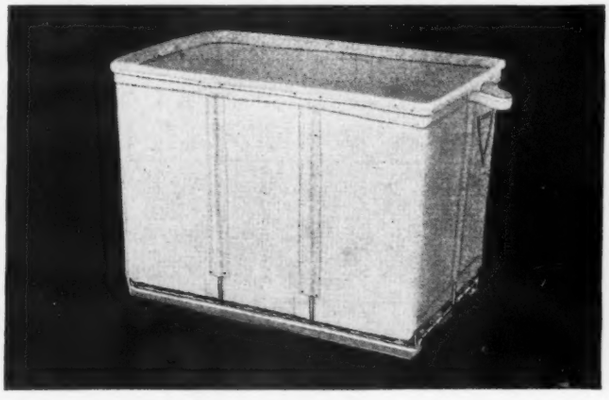

Why Do Fixers Put Starch on Belts?

Here's a question which superintendents and overseers are invited to answer, with any further information the question suggests.

EDITOR COTTON:

We would like to see published in your "HOW OTHER MEN MANAGE" department some discussions as to the reasons why overseers allow their loom fixers to sprinkle corn starch on the loom driving belt. This, as you know, has been a question in many cotton mills for years, and we would like to have those who follow this practice outline their reasons for it.

In this same connection, if there is any merit in this practice, why is it that direct motor-geared looms do not give trouble?

CONTRIBUTOR No. 4768.

MS. 8065.

Tests on the Continuous Card Stripper.

EDITOR COTTON:

The new development in card stripping, known as the continuous stripping roll, which was introduced to the mills a few years ago, seems to be lying dormant, as far as discussions in COTTON and other textile publications are concerned. At almost every manufacturers' convention, the system is discussed and passed off without very deep consideration. No doubt the depression of the cotton industry as a whole has had a retarding effect on its development, but this should not be so; a discussion as to the actual use of the idea should be advocated.

The fundamental idea is not new, as cards have been equipped with fancy rolls for years, but their use was never general. So far as I know, the old fancy roll was always attached to the front of the cylinder, and the card had to be stripped once a week with a stripping brush. The design and construction of the fancy roll was such that it acted similar to a stripping brush. Now, the fancy might clean the cylinder temporarily, but sooner or later it had to transfer its accumulation back to the cylinder, and as it was directly over the doffer, the waste went to the finished sliver to a large extent. What the doffer didn't take, went around to the licker-in, where a new load of cotton was taken on top of it, and the flats could not remove the waste material.

But now, the new idea is to have a differently constructed roll, which is placed at the back of the card, between the licker-in and the flats. It does not remove the waste from the cylinder, but simply keeps all the stock, which the cylinder is carrying, at the top of its wires. In this manner the flats can work on the stock and remove the waste, and the wire of the cylinder never fills below the knee. Theoretically this seems correct, as the relation between the flats and cylinder is emphasized, by holding the stock in such a position that both can work on it. In other words, it would seem that the result is similar to a close setting at this point. This theory is borne out by the fact that the web is usually satisfactory even when the card is very dull. According to our experience, the wire cannot be kept sharp any length of time with this stripping system, but this does not matter as the card works equally well when dull as when sharp.

According to our tests, cards equipped with this device actually save on the amount of waste made, and at the same time produce a better sliver. The accompanying table, Table I, was made after very careful experiments on different kinds of cards, running different classes of stock. These tests show an actual saving of approximately one per cent in waste at the cards.

It will be noted that in every test an actual saving of waste is proven. Now, there is another, bigger saving, that is, the time lost in stripping the card under the old system. The lowest estimate that I would make for stripping would be 1½ minutes per card per stripping. If the cards are stripped three times daily, this is an actual saving of 4½ minutes production per card per day. These figures will of course vary slightly in different mills, but this is a conservative estimate of the time lost in stripping. Now, in grinding, there is another saving in time, as the cards do not have to be ground as often to produce the same quality of work.

These facts show to us that the method has a decided advantage. The unknown factors are the life of the device and the amount of extra labor demanded of the grinder in taking care of it and keeping it properly set.

We have had several brief discussions of this subject in COTTON, but I believe it would be helpful if more readers with experience would discuss it more in detail, and I hope that some of them will do so.

M. W. H. (MASS.)

	American Cotton 7/8-1"		China Mix		Color No. 1		Color No. 2		Color No. 3	
	Card No. 1*	Card No. 2*	Card No. 1*	Card No. 2*	Card No. 1*	Card No. 2*	Card No. 1*	Card No. 2*	Card No. 1*	Card No. 2*
Time Run (Hours)	11:53	11:49	12:06	11:44	11:05	11:12	9:05	9:05	9:48	9:38
Good Waste %	.67	.52	.52	.75	.44	.82	.62	1.04	.88	.50
Fly%	1.87	1.41	2.09	1.73	2.56	1.45	1.68	.90	1.45	1.13
Cylinder Strips	.04	.73	.05	.91	.05	.55	.07	.58	.16	.82
Top Strips	1.81	2.49	2.09	2.66	1.77	2.81	1.75	2.64	2.39	2.71
Invisible	.36	.47	.55	.66	.49	.41	.68	.84	1.22	1.54
TOTAL WASTE	4.75	5.62	5.30	6.71	5.31	6.04	4.80	6.00	6.10	6.70
Size of Sliver	65 gr.	63	65	64	69	62	68	65	68	67

(*)—Note. In all tests, on each grade of cotton, Card No. 1 was equipped with the continuous stripping roll, and Card No. 2 was of the same make without the continuous stripping roll.

The cards equipped with the roll, the No. 1 Cards, were stripped before and after the tests, and the waste saved. The cards without the roll, the No. 2 cards, were stripped three times daily, and the waste saved.

TABLE I.

Wash Doesn't Like This Lay-out.

Some further ideas and opinions on this question, which appeared in the November issue. Any further experiences will be welcomed.

EDITOR COTTON:

I noticed in the October issue, on page 1393, that "CONTRIBUTOR No. 4157" wants someone to analyze his lay-out. Well, here is where I make an analyst out of myself.

First, considering his picker room. He stated that he made a 16-ounce lap on his breaker picker and that this machine was a 45-inch machine. He then took this lap to the finisher picker and made a 15-ounce lap. I think that this, along with his speeds in the picker room, is all very good when the width of the machines is taken into consideration. He seems to feel that he is likely to be criticized by some for making a 15-ounce lap on the finisher picker, which would be equivalent to a 10½-ounce lap on a 40-inch machine. However, considering all kinds of stock, I doubt if it is possible to present a lighter lap to the cards.

He went ahead to say that they had 45-inch Saco-Pettee cards, using a cylinder speed of 170 r.p.m. and a speed of 11 r.p.m. for the doffer. He also uses a draft of 117.24, making a card sliver of 49 grains per yard. His settings were, doffer to cylinder, 7/1000; licker-in to cylinder, 7/1000; top flat to cylinder, 12/1000; back plate top, 17/1000, bottom 29/1000; feed plate to licker-in, 12/1000; and doffer comb to doffer, 34/1000.

Now I think that the chief trouble of "CONTRIBUTOR No. 4157" is at the card. The introduction of 45-inch cards in cotton manufacturing was one of the many mistakes that has caused trouble in the card room. The 45-inch card is to the strand as the bobbin lead, oil spraying, long draft, draft rod system, etc. Each of the aforementioned, which was at first regarded as a wonderful improvement, causes unnecessary frictional contact on the front rolls, and the result is the production of a weaker yarn.

"CONTRIBUTOR No. 4157" is at a great disadvantage due to the fact that he must have a long draft at the card in order to make a decent card sliver. The only way for him to overcome this difficulty is for him to shorten the card draft to about 100, which would give him a 55-grain carding sliver.

I would like for "CONTRIBUTOR No. 4157" to explain to us why he sets the licker-in at 7/1000. There is no combing action at this point. The licker-in teeth simply take the stock from the feed plate and convey it to the cylinder. When one considers the surface velocity of the cylinder and licker-in, also the difference in the number of points of wire to the square foot on each, it can be quickly deduced that a setting of 12/1000 is close enough to insure the delivery of every fiber without a single one being taken around a second time. On the other hand, too close a setting at this point means much injury to the cylinder wire every time a little lump or hard piece of foreign matter is engaged. Such a setting is one of the many causes of blistered cylinders. The top flats should be set at 10/1000—easy to the gauge. Then, instead of setting

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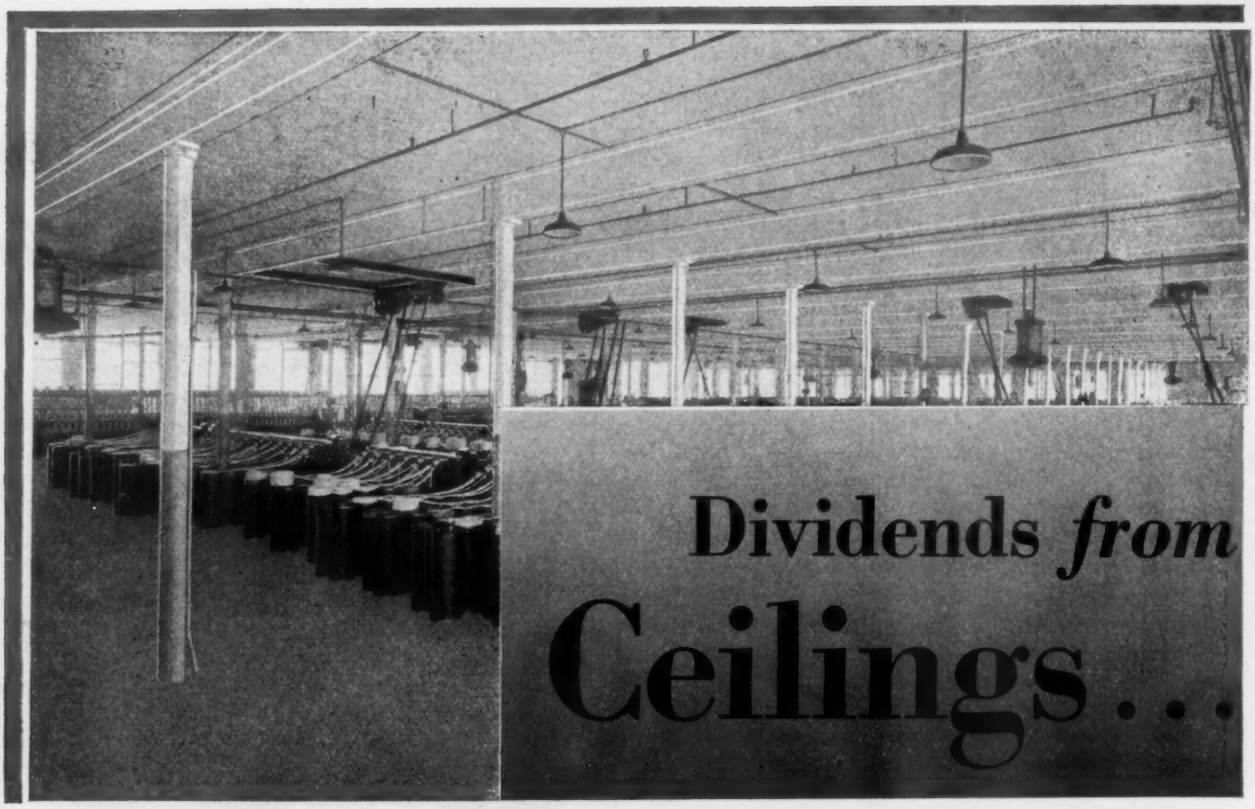

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the feed plate to a 12/1000 gauge, I would set it as close as possible to the licker-in.

It is well to remember that the arrangement of the licker-in fillet makes it impossible for the stock to be struck by the same teeth a second time. This is due to their spiral arrangement. Therefore, regardless of the closeness of the setting at this point, no injury to the fibers is possible. On the other hand, a close setting at this point serves as a protection to both the cylinder and flats.

Now, picture in your mind if you can, with a setting of 12/1000 at the feed plate and between the cylinder and licker-in (as in the layout given by "CONTRIBUTOR NO. 4157") what will happen when a lap runs out. The speed of the licker-in is not decreased as in the case of a close setting and of course the fibers are taken around the licker-in in clusters. Then, as they are conveyed to the cylinder in this form, the flats send out the old familiar S.O.S. call.

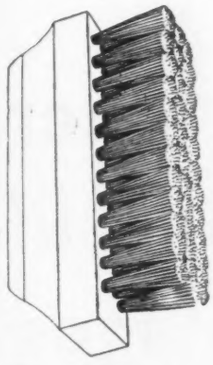
"CONTRIBUTOR NO. 4157" said that on their first drawing they have a draft of 5.99, making a drawing sliver weighing 51 grains per yard, and that on their finisher drawing they are using a draft of 6.30 to make a drawing sliver that weighs 52 grains per yard. His front rolls run 265 r.p.m. and the rolls are set, front to second, 1⅜-inch; second to third, 1⅛-inch; and third to back, 1⅝-inch. All measurements being taken from center to center.

I have the following settings on my drawing frames: Front to second, 1 7/16-inch; second to third, 1⅝-inch; and third to back, 1¾-inch.

I would advise "CONTRIBUTOR NO. 4157" to increase his drawing and run a lighter finished sliver. The speed should be increased according to the decrease in the weight of the finished sliver. Then, instead of running six doublings at the breaker drawing, I would run five. This would give a feed of 294 grains instead of 245, which would make it possible to reduce the slightly excessive draft he has on his finisher drawing. If he will try this I believe he will be well pleased.

He goes ahead to say that he has a draft on his slubbers of 4.11, which I think should be shortened. He should remember that the shorter the draft at the slubbers, the less streaks will appear on the surface of the bobbins. I also think that 1.02 turns of twist per inch is too much twist on slubbers. Of course "CONTRIBUTOR NO. 4157" may be running a low grade of cotton. He says he is using 1 1/32-inch to 1 3/16-inch cotton. But what kind? I believe that the turns per inch should be about .98 and that the speed of the front roll should be increased in proportion to give this amount of twist. He is making .66-hank roving which requires .98 turns per inch instead of 1.02 turns. Excessive twist on the slubbers means hard ends at the intermediates. That is, if any wiry stock appears.

On the intermediates we find "CONTRIBUTOR NO. 4157" making a 1.83-hank roving for the warp and filling with 1.35 twist per inch. This roving requires at least 1.60 turns per inch. Of course if there is no breaking back, 1.35 turns to the inch is okeh. But why so much twist in the slubber roving? I should think that if there is no breaking back at the fly frames with only 1.35 turns to the inch that the twist per inch on the slubbers could be decreased correspondingly.



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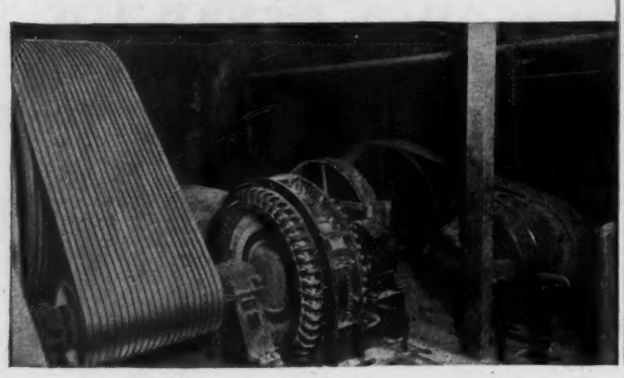

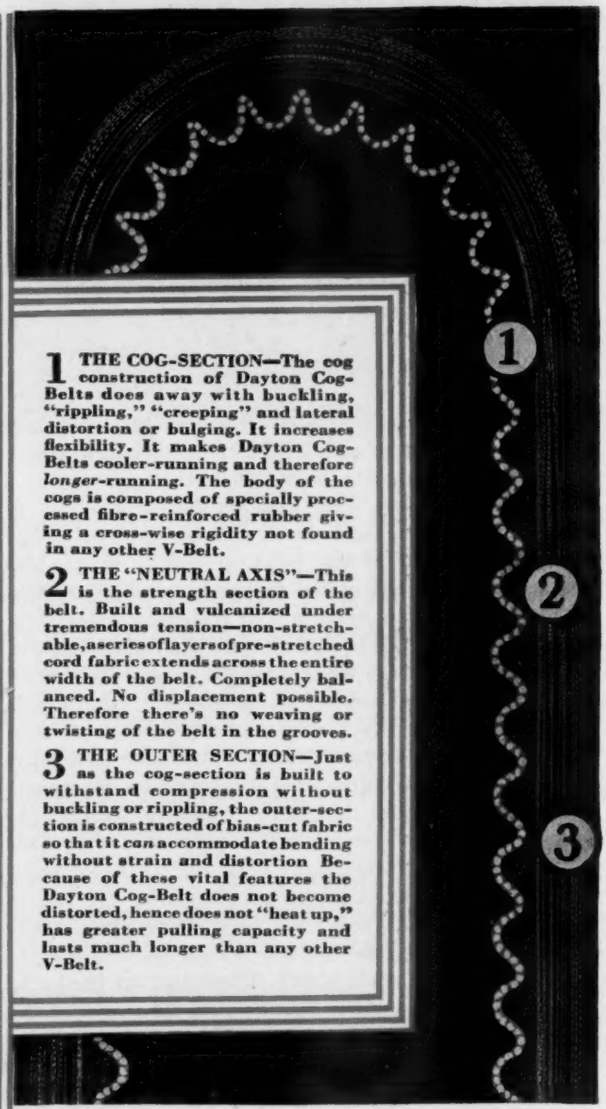

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By his layout we find that he is making a 5.30-hank roving on his warp fly frames with 3.65 turns to the inch. This should not be over 2.80 turns to the inch, which causes him to have .85 excessive turns of twist.

On the filling fly frames we find him making 7.00-hank roving with 4.27 turns of twist. This should not be over 3.20 turns per inch. hence he has 1.07 excessive turns per inch here.

I like "CONTRIBUTOR No. 4157," because from his article he appears to be a gentleman. However, his lay-out, I am sorry to say, is very faulty and I am amazed that he is getting by with it. I hope that this may prove of some aid to him.

WASH (R. I.)

Answers to Cloth Room Questions.

A summary of some of the recent discussion relating to this department. You are invited to give your experience.

EDITOR COTTON:

The attention of the writer was recently called to some articles which appeared in the January issue of COTTON requesting more discussion about the cloth room. Several questions, such as, "What is the best speed for a folder?" "When is a yard a yard?" etc., were asked.

Now in regards to the best speed for a folder, that depends a great deal upon the quality and style of the work being folded, as well as upon the width of the folder and the weight of the goods.

If it is desired to get a good amount of work through and at the same time get good work, the speed cannot be faster than that at which the folder will lay the cloth straight and parallel, thus insuring a good even piece after the cloth is taken from the machine. I know of a folder which is forty inches in width that is folding goods from tubing twenty inches wide to cloth forty inches wide, weighing from 2.60 yards per pound to gauze that runs as light as 11.00 yards to the pound, and folding all styles well and evenly at a speed of 104 yards per minute. I know of another folder of a different make that is folding the same style of goods at a speed of 120 yards per minute. This latter folder is 49 years old but is doing excellent work. I do not believe the variation in the measurements of the cloth from either folder is enough to warrant taking many measurements at different places in the cloth. I think that the quality of the work done, regardless of the speed, depends to a large extent upon the operator.

If a mill has folders enough and desires excellent work, along with an easy time for the operators, 75 to 80 yards per minute is the best speed, which is about what the builders of all 40-inch folders recommend.

In the July, 1929, issue, a contributor had asked "When is a yard a yard?" and he also wanted to know how to avoid "crawls" or "creeps" in 30 inch, 7-ounce osnaburg after it is baled. He said he recently had seen a bale of this goods opened about three weeks after it was baled, and the folds measured only about 35½ inches, and that he was quite sure they were full 36-inch folds when baled. He said this cloth is not

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subjected to any undue tension in the cloth room, but possibly carried about nine per cent moisture content.

In the January issue, on page 283, was a reply, which pointed out that osnaburgs are usually made with coarse yarns without very much twist, and that "on putting this class of material through cloth room machinery, the warp threads are pulled almost straight, practically eliminating the natural crimp which the threads would have as the goods come from the loom. After the goods are finally removed from the cloth folder and baled, the threads will assume their natural position, and this will make a short fold. It should not, however, make a full one-half inch difference in each fold."

This man continued, in the January issue, by saying that, "an excessive amount of moisture content will make the goods stretch more easily and after the moisture has dried out more or less, the goods will shrink in addition to the natural crimp in the threads. Any fabric like an osnaburg will absorb moisture much more easily than a fabric made of tightly twisted yarns. For this reason the shrinkage is more. Very few mills are equipped to determine accurately the amount of moisture content in goods. As this particular mill is not so equipped, they are probably putting in more than nine per cent moisture, which should account for the excessive breakage."

I will quote this man once more: "It also makes a difference as to which part of the cut is measured. The first few yards on a folder are usually short, as there is an excessive amount of tension on the goods when the folder is first started. The number of short yards will depend more or less upon the operator. As soon as the folder bales are running at full speed, the yards should be exactly 36 inches until near the end of the cut, when they will be a trifle over 36 inches to make up for the short yards at the start. I am speaking now of double cuts about 120 yards in length. If 60 yard cuts are handled, the first few folds will be short and the remainder of the cut should be exactly the right length."

Possibly osnaburgs or other goods of a similar weight and construction may show a shrinkage after being baled, but, if the goods are folded right and are not under tension, I doubt if they will. The writer who asked this question stated that there was no tension, but the January contributor I have quoted shows that all of the crimp of the threads in the weaving is taken out before the goods are baled. Naturally, if the tension is such on coarse goods that all this crimp is taken out there must be a relaxing after being folded and baled. We had occasion to take a bale back to the cloth room recently that had been baled two months and, as we had read the article on shrinkage, we measured the cloth in this bale and did not find any variation from that at which the folder had originally measured it.

Experience has taught us that a piece of cloth measured on one folder, then at once re-folded upon another never gives the same measurement, regardless which folder the cloth is measured upon first. This is due, we believe, to the crimp or plait at the end of each yard. A great many mills, to make sure that there is no shortage in their cloth, set their folders to measure from 36 1/16 to 36 1/8 inches. This is a very wise act upon the part of those mills that do it, for unless folder tenders are carefully watched, different weight drags are used that may cause the cloth to measure a short yard.

In regard to the overseer of weaving having charge of the cloth room, brought up by another contributor, to some of us who have had the experience, it seems absolutely absurd to think of such a thing at these times. Many boss weavers would like this but in the end the reaction would come directly upon him and the managers of the mill would soon find out that this method is absolutely obsolete. A cloth room head should be of as much importance as the head of any other department. He is supposed to find all defective work, not only that caused by poor weaving, but that caused by poor work in the carding, spooling and spinning departments. If he is capable of holding the position, many times he will show up work that should have been found before getting to his department.

Some mills have a report of the causes of all seconds that are made each week, one copy going to the agent, one to the overseer of weaving, one to the overseer of spinning and a copy retained by the cloth room. This report shows pieces of seconds made and the cause of the same on each style, as well as the percentage of the defects from each cause to the total per cent. The report thus makes it possible for each department to learn of the seconds that were made as a result of poor work in their respective departments, which, of course, gives them the opportunity to correct the trouble as far as possible.

Along with the foregoing, I would like to give the following formula for blue stamping ink, as requested by another man, which we have found very good:

One quart of hot water, three pints of ultra-marine blue, stir until all is dissolved. Then take ¼ pound of sago, add one quart of cold water and allow to dissolve, after which the two solutions should be mixed and boiled until thick. This solution, if too thick, may be thinned by using gum dextrine dissolved in water to the thickness of syrup.

Some mills use gum dextrine solely instead of the sago and it was used for years in one mill that I know of. They started using it when gum arabic got to where it cost over $1.00 per pound. We find that the gum dextrine works just as well as the gum arabic. When we desired a darker blue than the aforementioned solution would give us, we dissolved extract of logwood and then added this liquid to the mixture until the shade desired was attained.

CONTRIBUTOR NO. 4707.

"Tall oaks from little acorns grow," but no man will ever hold a big job and command a large salary unless he can get to be broad-minded; lend an attentive ear to the experience of others; make earnest endeavor to interpret and carry out his superior's orders; and, above all, not forget that there are a few others that probably know as much as he does.

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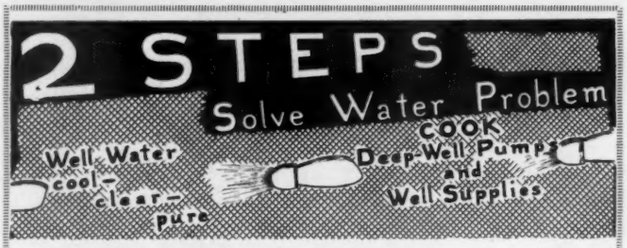

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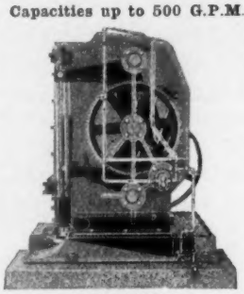

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Can a Person Smile and Think at the Same Time?
A DEBATE

We handled a rather unusual subject in an unusual way, by promoting a debate on it, the arguments in which are presented herewith.

No! says this man.

EDITOR COTTON:

I have read with interest the article on "Qualifications of the Foreman," by "CONTRIBUTOR No. 4695," on page 794 of the May issue of COTTON. His last paragraph reads as follows:

"Of course there are some people that are very easily spoiled by a little decent treatment, and for this reason the foreman must be a rather keen student of human nature. My idea of a real foreman is one that can mix with the operatives, yet command their utmost respect; one that can lead, not drive; *and one that can always hold his chin up and smile.*" (The italics are mine).

This gentleman stressed so very strongly the necessity of the good foreman being able always to hold up his chin and smile under adverse conditions, that I feel certain he was smiling at the time he wrote the article.

Now, no one denies that it is much more pleasant to have a smiling countenance around one rather than a grouch. However, has it ever occurred to you, Mr. Editor, that it is a physical impossibility for a person to smile and think at the same time? It is a very simple matter to prove the truth of this assertion. Try it on yourself.

I have been laboring under the impression that most textile mills are operated for the purpose of making profits for the stockholders. If I were a stockholder in an organization of which every foreman was busy holding up his chin and smiling, I would most assuredly unload as quickly as I could find some unsuspecting person to unload upon. I believe, as most people do, that a cheerful worker is a better worker. However, in my opinion, a smiling worker is a dead loss as far as any constructive thinking is concerned.

CONTRIBUTOR No. 4778.

(Editor's Note: Since we do not participate directly in the discussions in this department, we publish below the comments of a well-known southern operating executive to whom we had the opportunity to submit the foregoing letter.)

Yes! says this one.

EDITOR COTTON:

I have read the article in the May issue of COTTON under the heading, "Qualifications of the Foreman," and I have also read the reply of "CONTRIBUTOR No. 4778," and I am somewhat in accord with both views though they may appear to be contradictory. The main thought to which "CONTRIBUTOR No. 4778" takes exception is the last sentence in the article, which reads, "My idea of a real foreman is one that can mix with the operatives, yet command their utmost respect; one that can lead, not drive; and one that can always hold his chin up and smile."

Certainly, anyone with these qualities would make an ideal foreman. Anyone who can mix with the operatives, yet command their utmost respect; one that can lead, not drive; would naturally have every reason to hold his chin up and smile. The raised chin and pleasing smile are the *result* of an achievement, not the cause. It has been my observation that the man who is doing effective work and really getting results is less apt to fume and fret than one who is conscious of the failure of his efforts.

I can equally agree with the views of "CONTRIBUTOR No. 4778," *if* the smile on the foreman's face is a hypocritical smile for the purpose of concealing a morbid or sordid nature. Then it won't work. If it is mechanical just for effect, the effect will not be advantageous.

However, I must disagree with the statement that "it is a physical impossibility for a person to smile and think at the same time." It is just as natural for pleasant thoughts to produce a smile as for unpleasant thoughts to produce a frown. If this were not true, there would be no advantage in culture and education. If I thought that thinking seriously and intelligently would never produce a smile, I would be very skeptical about having been created in the image of God and endowded with an intellect superior to the English bulldog who can't help but grin.

My thought, after carefully analyzing the reply of "CONTRIBUTOR No. 4778," and his attitude toward the smiling worker, is that his philosophy of life may be summed up in his own statement, as follows, "If I were a stockholder in an organization of which every foreman was busy holding up his chin and smiling, I would most assuredly unload as quickly as I could find some unsuspecting person to unload upon."

Unloading a knotty problem on some unsuspecting person never produces that smile of achievement. This is the reward of those who have sufficient internal organs to wrestle with the problem until a satisfactory solution has been effected. This is the philosophy that makes a man hold up his chin, and puts a smile on his countenance that won't wear off.

CONTRIBUTOR No. 4779.

(Editor's Note: The foregoing comment from "Contributor No. 4779" was submitted to "Contributor No. 4778," who has now replied as below.)

No! says this man again.

EDITOR COTTON:

"CONTRIBUTOR No. 4779" attempts to modify my statement by limitnig a smile to the hypocritical smile only. So at the further risk of having him disagree with me again, I will state that it is my belief that no constructive thinking can be done while smiling any kind of a smile—hypocritical, self-complacent, good humor and vacuous smiles included.

Your contributor points out in his reply that the raised chin and pleasing smile are the result of achievement, not the cause. He further states that it is just as natural for pleasant thoughts to produce a smile as for unpleasant thoughts to produce a frown. Exactly! The smile comes *after* the achievement. The work has been done, he now stops to smile. Probably he will go on to further achievement and then smile again; but notice, the smiling interval has been void

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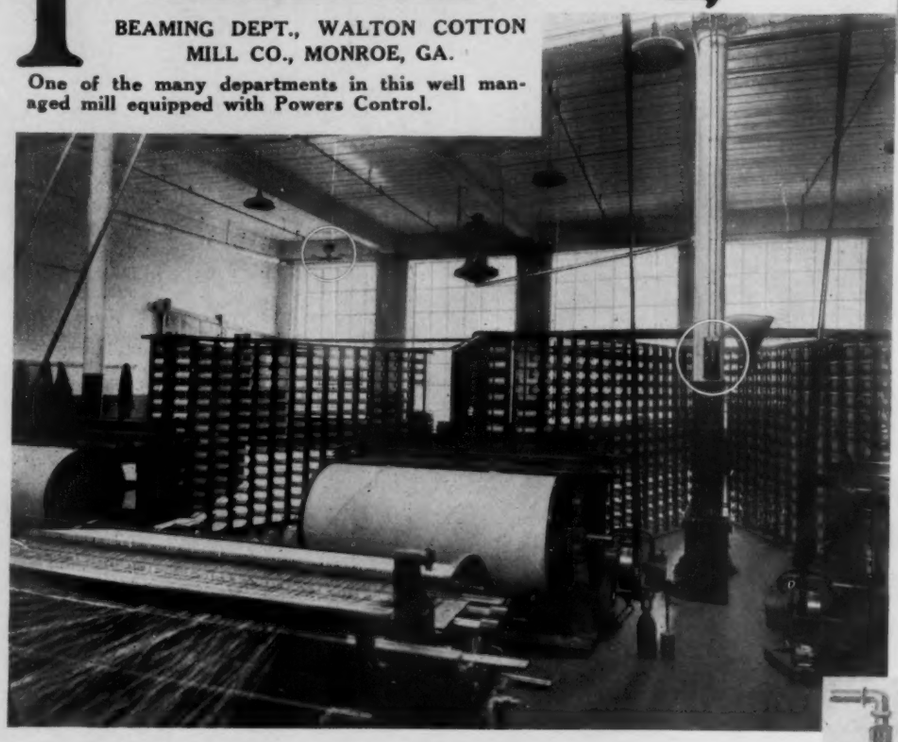

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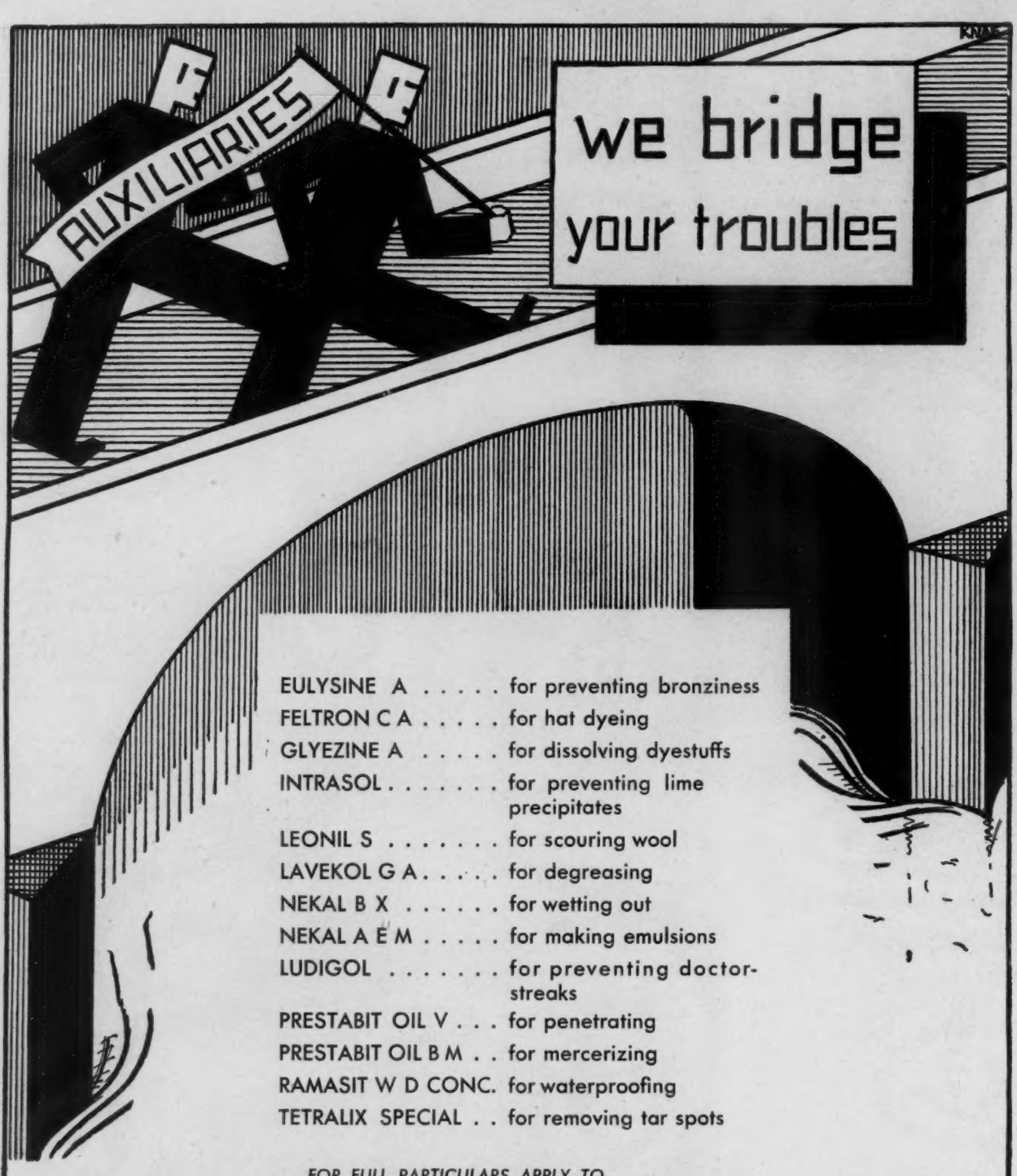

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of work done, and according to your contributor the smile has not caused the succeeding accomplishment.

Has not your contributor ever noticed in his own organization that when everything is going fine, and everyone is just exuding satisfaction with things in general and themselves in particular that something invariably goes wrong? They have been so busy smiling that they could not think enough to forestall the trouble.

His statement that there would be no advantage in culture and education if pleasant thoughts did not produce a smile, is interesting. My idea is that education and culture are for the discernment and appreciation of truth; not necessarily a pleasant truth. A smile is only a pleasant emotional reaction. I venture to state that the reaction of your contributor to any of the great abstract truths is not a smile. He refers to having been created in the image of God. Did this pleasant thought produce a smile? No, he was still thinking, and possibly of the vast responsibility that was his. He contemplates the heavens on a starlit night and reflects on the majesty of their Creator. Does he smile? No! He thinks. And so it is in the presence of any other great achievement. If my reading of history is correct the majority of the great did not smile after each achievement. They either stood in awe at the power of human thought or pressed on to further achievement.

Your contributor's analysis of my philosophy of life is interesting. I am somewhat uncertain as to the connection between the implied lack of certain internal organs, sometimes crudely referred to as "guts," and the point under discussion. There is no knotty problem here. It is a matter of belief. I believe that a certain condition over which I have no control, in an organization of which I am a stockholder, is unhealthy. Would your contributor have me hang on, unthinkingly, grimly, and grinningly as his English bull-dog? Absurd. Find someone who is not so particular (or, shall I say, someone who is smiling), and let him have it.

CONTRIBUTOR NO. 4778.

(Editor's Note: Once more these views of "Contributor No. 4778" were passed on to "Contributor No. 4779", who presents the closing argument for his side as below.)

Again, Yes!

EDITOR COTTON:

I have read the rebuttal of "CONTRIBUTOR NO. 4778" with a smile. In fact, before the end of the discussion the smile was transformed into hearty laughter. Was it because what he said did not make me think? Was the argument amusing? Could it be possible the anticipation of what he was going to say would produce a smile??

At any rate, I got a lot of kick out of reading this rebuttal, and I am still smiling while I write this reply. I am persuaded that "CONTRIBUTOR NO. 4778" had abroad extended smile on his countenance when he wrote this rebuttal, because according to his own statement he is unable to do any constructive thinking while smiling.

He bases his arguments on a personal belief, but produces no practical and reasonable grounds for that

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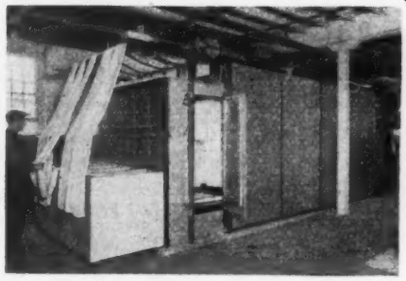

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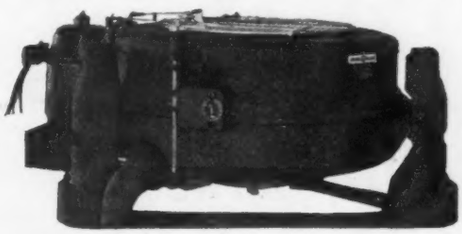

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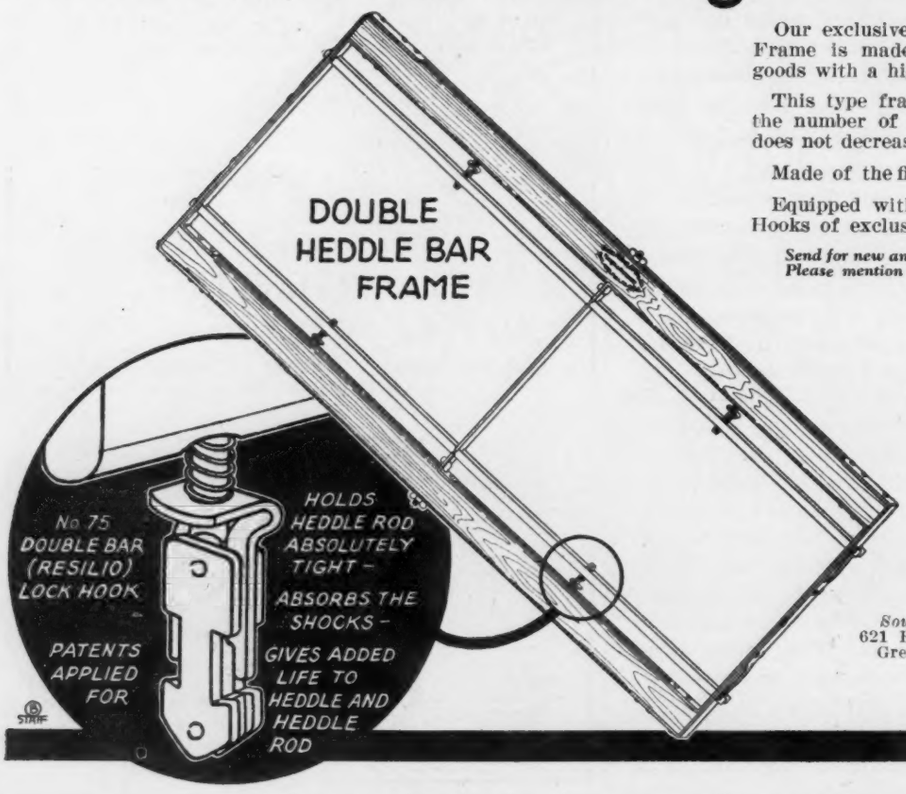

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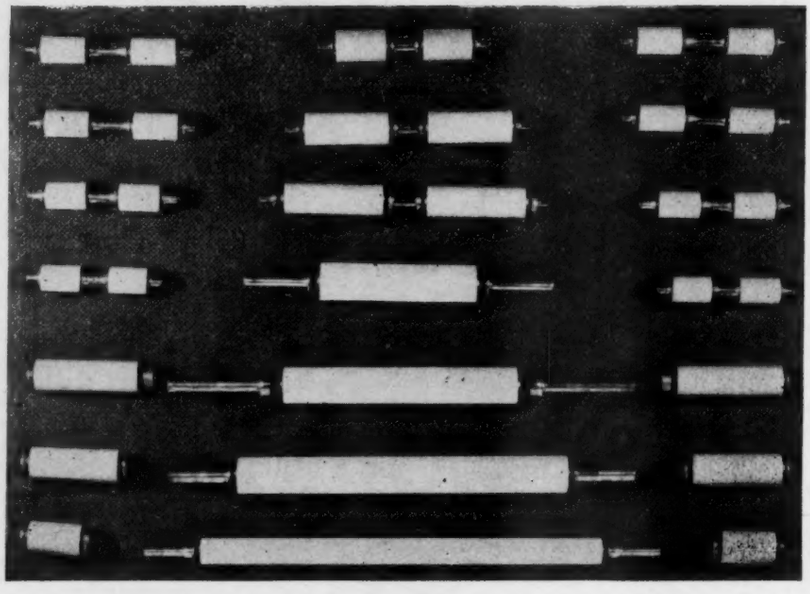

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belief. A spontaneous smile is a natural expression of one's deepest soul. If a man has enough of love and kindness in his nature and enough confidence in himself and in his Creator, he can smile under almost any circumstances. For circumstances do not alter true character. Brave men face death with a smile, while a coward cringes at the first appearance of danger. Then according to this man's theory, a brave man must go to his death without serious thought, while the coward meets the end burdened with constructive thinking.

I believe if "CONTRIBUTOR No. 4778" would stand for a moment beside the crib of a sleeping infant and watch the waves of smiles coursing its little face, he would realize the origin of a smile is the gift of a Supreme Intellect, and the degree of a man's power to possess it is in proportion to his ability to mold his thoughts and life in harmony with the thoughts and purposes of that Supreme Intellect.

When a man in his process of thinking finally gets around to this fundamental truth and appropriates it as a dominating influence in his life, he soon finds himself in possession of a fixed achievement that enables him to smile and do some constructive thinking while going about his daily tasks.

I hope some day later on to have another letter from "CONTRIBUTOR No. 4778," stating that he has tested these truths and that these facts have been a greater blessing to him than any beliefs that he might have had, the truth of which could not be established.

CONTRIBUTOR No. 4779.

Report of Texas Meeting.

(*Continued from Page* 1025.)

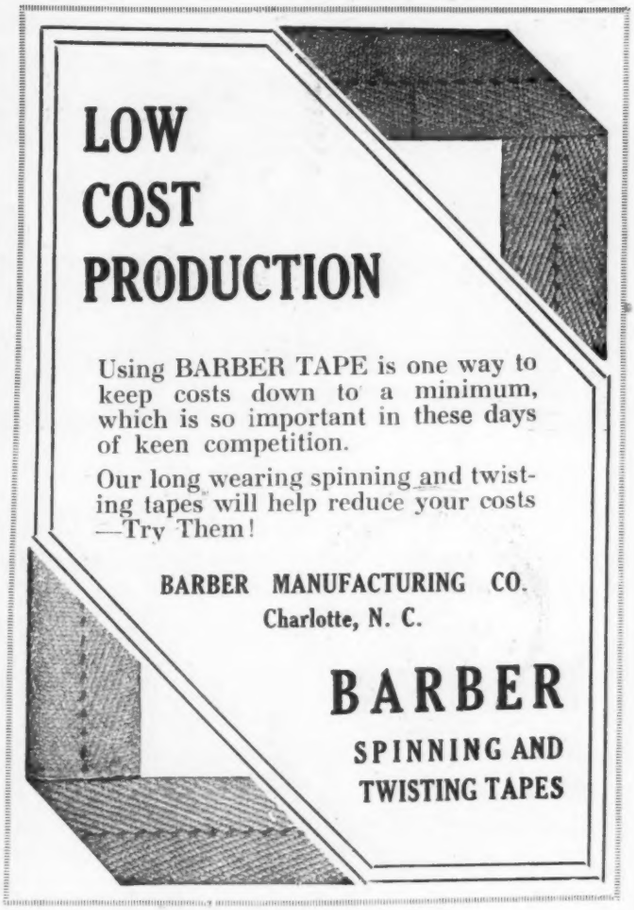
395 r.p.m., to 545 r.p.m.," said L. R. Manning, "and got a cleaner sliver."

The chairman asked for experience with oil spraying. Mr. Megarity said that he is using it, and that he recently substituted the new method of applying the oil just before the cotton goes into the vertical opener and that he is getting fairly good results with it. "We find in the card room that the lint and fly is kept down to a great deal more, but there is no difference in the spinning room so far as I can see," he said. "The evenness of the yarn is practically the same. We put on .3 of one per cent of oil."

Mr. Burow asked if there was any trouble with it gumming up on the machines, and Mr. Megarity said he had this difficulty at first, when it was necessary to clean it off three or four times a day, but that now he cleans only once a day. His equipment, he said, has a separator air compressor on which he carries 52 pounds.

Mr. Bard of the Dallas Cotton Mills, asked whether any men present were using only one-process of drawing. Mr. Clark replied that on coarse yarns where evenness and strength are not essential, he had found it satisfactory, but that for strength and evenness he had not found it successful. Several men present, on coarse yarns, stated that they use only one process.

Mr. Bard next asked whether any of the mills had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used round bales. Mr. Burow said he had used some satisfactorily, and as a by-product had been able to reclaim the burlap for use in baling up cloth.

Bottle Oilers on Cards.

W. F. Smith, of Mexia, next told of an idea they were applying, through the use of bottle type oilers on the cylinder, doffer and licker-in shafts, whereby the lubricant is put in a bottle and fed to the bearings through a wick. He said they got the idea from using the same method on line-shafting, and that so far their experience with it had been very successful. This concluded the session, and the members met for luncheon, which concluded the meeting. At the luncheon, the annual election of officers, reported in a preceding paragraph, was held.

Effect of Worn Rings on Breaking Strength.

Says worn rings do not affect breaking strength, and asks what causes rings to wear. What do you think?

EDITOR COTTON:

I note in the March issue the letter from "T. A. D. (GA.)," asking a number of questions with reference to spinning and carding. I would like to discuss only one of his questions in this letter, that is, the one in which he asks whether spinning rings becoming worn has a tendency to weaken the yarn. He said that in a few talks with mill men, some said yes and some said no. He also says that he has about 30,000 rings, put in as I understand it approximately during the last twelve months, that have shown signs of wearing extremely fast, and that it is possible to detect a wavy appearance on the rings on the inside.

First, I would suggest that he run some yarn on some of his best rings, and also on some of his very poorest rings, and check for himself the matter of breaking strength, using the same roving in each instance, in spinning approximately under the same conditions, except for "ring wear". I do not believe that in *actual test*, he will observe any appreciable difference in the breaking strength. I believe there are many other factors that would play a much more important part in the strength of his yarn.

I do believe, however, that he will find as his rings become more and more worn, that his spinning will not run as good as if the rings were not worn, necessitating an increase in twist in the yarn, other factors remaining the same. I also believe that he will find certain rings which will wear much faster than others, and which will have to be taken out and replaced, grouping the rings that do not wear as rapidly together, replacing the other rings by new sets on other frames.

I also believe that worn rings will use up travelers or necessitate faster traveler replacement.

The question of replacing new rings, against those that are running, is a vital factor. I believe that "T. A. D." can probably get considerable service out of his rings yet, replacing, as I have already indicated, those that have become so worn as to result in poor spinning and end breakage. Put the new rings in together and re-group those rings that were put in at about the same time.

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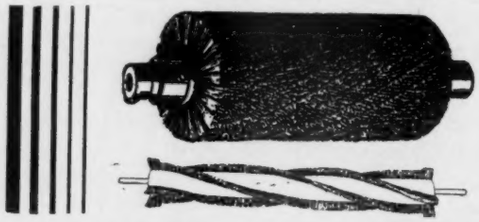

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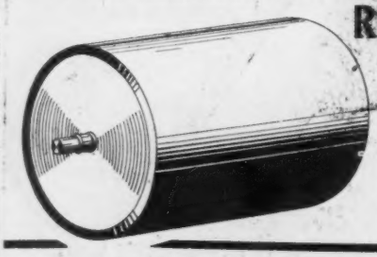

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Doubtless worn rings do mean not as good spinning, as I have already mentioned, all of the other factors being taken into consideration, worn rings also mean the use of more travelers, in my opinion. If a man does not get as good spinning, he is losing on the quality of the yarn. By the insertion of a little more twist in the yarn, one could keep the ends up better in spinning as the rings became more worn.

Now, somebody will come back at me with the statement that if you do not get as good spinning, then you must be weakening the yarn. This seems to hold true so far as actual spinning goes, but as far as actual strength of the yarn is concerned, I do not believe there will be any appreciable difference on a test between yarn spun on the best versus the poorest ring. But "T. A. D." knows his own spinning and how it is running, and my advice is to run the 30,000 rings and prepare for replacements gradually as these rings become so worn as to lower the quality of the yarn by inferior spinning. I do not believe that this will necessitate a rapid replacement, but that it can be spread over an extended period of time.

While we are on this subject, I would like to ask "T. A. D." and other readers their opinions as to why these rings have become wavy. What is the cause? Let's have some old time spinners tell us the probable causes for wavy rings. Is it the material in the ring, or what is the cause? I am sure "T. A. D." would appreciate an answer to this, for if he replaces, he would like to avoid the same source of difficulty.

CONTRIBUTOR No. 4742.

Replies to Questions on Carding and Spinning.

EDITOR COTTON:

As I have had the benefit of many helpful tips from recent issues of COTTON, I would like to answer some of the questions asked by "T. A. D. (GA.)" in the March issue.

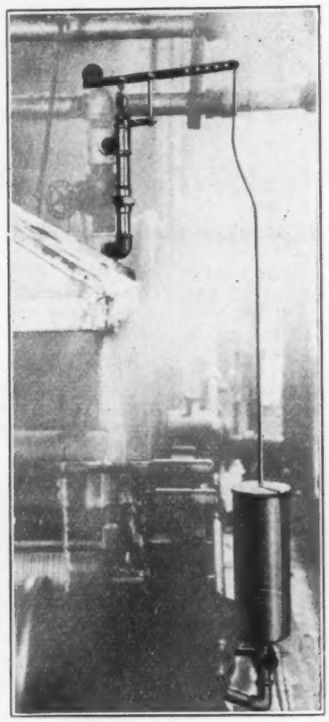
I would say in answer to his first question that worn spinning rings do have a tendency to weaken the yarn, and this is more noticeable in fine yarns than in coarse yarns. However, I would advise him to make some tests on some of these worn rings for it may be that it will not be necessary for him to replace quite as many as he now deems necessary.

At our mill we always run our fine yarns on the frames that have the best rings. When we put in new rings, we do not put them on fine work until they have been well broken in on heavier yarns. Of course new rings should require lighter travelers than old rings.

"T. A. D." in his second question wanted to know whether the traverse grinder rolls on the cards sharpen or grind the points on the card clothing, or whether the clothing sharpens itself against the grinder roll. I believe that the traverse grinder rolls on the cards grind the points of card clothing on the cylinder and doffer.

As to the comb boxes, we oil ours twice each week, using a semi-fluid lubricant. As for cleaning them out, we find it the best policy not to disturb them.

K. Y. (MASS.)



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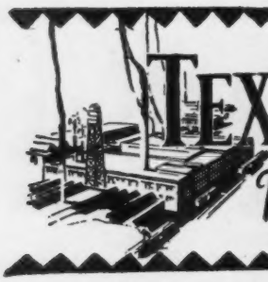


TEXTILE BOOKLETS *Worth Writing For!*

The booklets or catalogs briefly mentioned below may be obtained by any reader of COTTON who will write to the Company issuing them or to COTTON, Grant Bldg., Atlanta, Ga.

1. Cotton Picking, Carding and Spinning—Covered by three different catalogs. Picking catalog covers Opening and Picking Machinery; Card Room catalog covers Cards, Combers and Roving Frames; Yarn Machinery catalog covers Spinning, Twisting, Spooling, Quilling and Reeling. By Whitin Machine Works, Whitinsville, Mass.

2. Pepperell Equipment—10 page illustrated booklet, showing High Speed Warping from cones as adopted by Pepperell Manufacturing Company after thorough experiments. Installation and product photographs. Issued by Universal Winding Company, Boston, Mass.

4. New Methods of Opening Cotton, also "Brown" Automatic Mixing and Cleaning Distributor—Illustrated booklets showing advantages of Centrif-Air Cotton Cleaning System. Pamphlets also on better picking and carding and pneumatic trunk line cleaner. Issued by Centrif-Air Machine Company, Atlanta, Ga.

5. The Bahnson Master Control—Bulletin No. 301, 5 pages. Illustrated. Automatic device designed to control humidifying equipment so as to maintain a constant relative humidity. By The Bahnson Company, Winston-Salem, N. C.

6. "Cotton" Weather Vein, 32 pages; "Rayon" Weather Vein, 40 pages; house publication, illustrated. Bulletin 58, 80 pages, illustrated; Manufactured Weather—the automatic control of air conditions within buildings. Carrier Engineering Corporation, Newark, N. J.

9. The Johnson Friction Clutch—illustrated brochure and advertising reprints showing clutch installations of interest to textile field.—By Carlyle Johnson Machine Company, Manchester, Conn.

10. Leathers, Textile—Booklet No. 101, 48 pages. Illustrated. Showing BONDARON Check Straps—Lug Straps—Harness Straps—Pickers—Belting, both round and flat, etc. Horsepower tables and other interesting information. By Charles Bond Company, 617 Arch Street, Philadelphia, Pa.

11. Whitinsville Rings—16 page illustrated booklet. Describing ring manufacture, measurements, types, uses. How to determine flange sizes. By Whitinsville, Spinning Ring Co., Whitinsville, Mass.

12. The Pick Method of Weaver Wage Payment—Booklet, 20 pages. A practical manual giving full information and tables on this method of payment. By the Durant Manufacturing Company, Milwaukee, Wis.

13-A. Equipping Modern Textile Plants—Booklet, 25 pages, illustrated. Describes value of Monel Metal equipment in textile plants and presents reports from mill owners and operators on actual experiences; equipment, descriptions, etc. Also **Dyed in the Truth**—Reprints of advertisements of special interest to textile dyers. International Nickel Company, Inc., 67 Wall Street, New York, N. Y.

14. Emerson Conditioning Ovens—2 booklets on conditioning of textiles, or determination of the amount of moisture in textiles. Issued by Emerson Apparatus Co., Melrose Highlands, Mass.

15. Saving Labor, Material and Power in the Textile Industry—Bulletin No. 133. Illustrated. Controlling, Recording and Indicating Instruments in textile mills. Temperature, Pressure, Humidity, equipment layouts and descriptive applications. The Foxboro Company, Foxboro, Mass.

16. Tycos Instruments for the Textile Industry—Catalog, 84 pages, illustrated. Shows instruments for every application in the textile industry, specifications, prices, diagrams and installation data by Taylor Instrument Companies, Rochester, N. Y.

17. The Powers System of Thermostatic Control—"Slasher Room is Bottle-Neck of Textile Mill." 18 page illustrated booklet showing importance of proper treatment of cloth in slasher room and advantages of Thermostat over hand control. Also room temperature control illustrations. Issued by Powers Regulator Co., 2739 Greenview Ave., Chicago, Ill

19. Quaker City Chemical Co.—48-page booklet containing useful information, tables, formulae, on dyeing, bleaching and finishing all textiles. Issued by above company, 2736 North Broad St., Philadelphia, Pa.

20. Bleaching, Dyeing, Finishing and Printing Textile Goods—70-page booklet containing interesting information on faults and methods in finishing goods, useful tables and definitions. By Bossen & Lane, Atlantic, Mass.

21. Warp Sizing and Composition of Cotton—Folder containing reprints of articles carried by textile publications of interest to progressive mill superintendents. By Seydel-Woolley Co., 748 Rice St., Atlanta, Ga.

22. Tragasol and Its Uses—Booklet, 60 pages, constituents and properties—Dissolving and preparation—sizing and dressing of yarns—cloth finishing—miscellaneous. By John P. Marston Co., 247 Atlantic Ave., Boston, Mass.

23. Practice of Rayon Sizing in American Mills, Raygomm, Lakoe Gum—Three booklets on products for sizing and finishing rayon and other textiles, presented by Stein Hall & Co., Inc., 285 Madison Ave., New York, N. Y.

24. Wyandotte in the Textile Mill—90-page booklet with information on bleaching, dyeing all textiles, including hosiery.—J. B. Ford Co., Wyandotte, Mich.

26. The Guide Post—18-page booklet showing porcelain guides, rollers, eyes used by textile mills.—By Page-Maddox Co., 277 Ralph Ave., Brooklyn, N. Y.

27. The Seven Factors of Belting Economy—Booklet, 112 pages, illustrated, containing authoritative information on the economical layout, care and operation of belt drives. Chas. A. Schieren Company, 33 Ferry Street, New York, N. Y.

28. Constants and Calculations for Textile Mill Men—Memorandum book containing tables of constants and calculations as compiled by a prominent textile executive.—By Fisher Leather Belting Co., Inc., Philadelphia, Pa.

30. Lubrication of Textile Machinery—32 pages, illustrated. Data covering the economical lubrication of all textile machines. New York and New Jersey Lubricant Co., 292 Madison Ave., New York, N. Y.

31. Aluminum Paint—The Cost of Metal Protection—Booklet, 46 pages. Illustrated. The protecting and light reflecting qualities of Aluminum paint; its advantages to textile industry; where it is used; specifications. By Aluminum Company of America, 2400 Oliver Bldg., Pittsburgh, Pa.

32. Flooring, Open Steel, Area Gratings and Steps—Folder, 6 pages. Illustrated. For platforms, walks and stairs; non-slipping. By Kerlow Steel Flooring Company, Jersey City, N. J.

33. Cast Iron Columns—18-page booklet on use of cast iron columns in mill construction. By National Cast Iron Pipe Co., Birmingham, Ala.

35. Seating Equipment—Automatic, adjustable, ten inch height adjustment, all steel, mill and factory seating specialty, illustrated booklet, ten pages. Vitek Manufacturing Company, Omaha, Nebr.

36. Hosiery Inspection, Seamless and Full Fashioned—Illustrated folder. Also describes new Leg Examining Machine for full fashioned ladies' stockings. Edward R. Ammon, Reading, Pa.

38. Sleaziness in Full Fashioned Knitting—Illustrated survey with samples of fabrics showing causes of sleaziness, and methods to be employed in eliminating it.—By Textile Machine Works, Reading, Pa. (This company also issues parts catalog of Reading full fashioned machine with general information on subject of full fashioned knitting.)

39. Trend of Sales of Silk, Rayon and Cotton in the Piece Goods Departments; twenty-four-page booklet; prepared by DuPont Rayon Company in conjunction with National Retail Dry Goods Association. Copy furnished without charge by either of above. DuPont Rayon Co., 2 Park Ave., New York, N. Y

40. The New Competition in Color—20 page illustrated booklet. Discusses future trends in business and their significance, present trend toward fast colors in textile industry and opportunity this trend offers for increased profits if properly utilized. By Franklin Process Co., Providence, R. I.

41. Budget Control—40-page booklet showing how each part of business budget should be prepared and principles of its effective operation together with a summary of benefits.—By Ernst & Ernst, Accountants, 27 Cedar Street, New York, N. Y. (This company also has available booklets on Standard Costs, Business Control Through Analysis, The Better Wage, Factors to Consider in Working Out Mergers).

42. Factoring—Booklet, 11 pages. Summary of Factoring Service provided for Manufacturers of Textiles. By Textile Banking Company, 50 Union Square, New York, N. Y.

44. Points of Interest in and Around Atlanta—36 pages. Illustrated, describing places of scenic and historic interest in Atlanta in particular, and the Southeast in general. Atlanta Biltmore Hotel, West Peachtree, Fifth, Sixth & Cypress Sts., Atlanta, Ga.

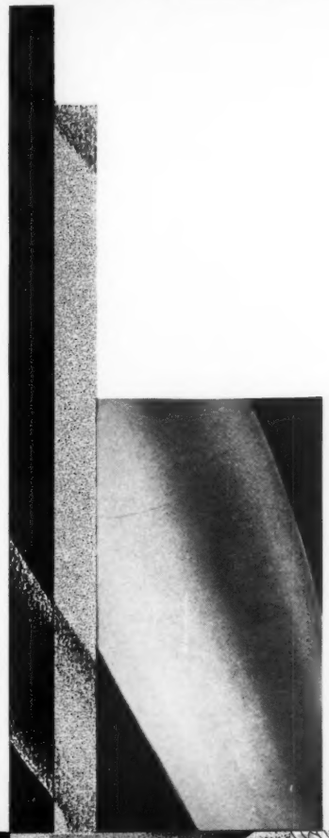
Knitting Section

SMOOTH Gussetoe...narrowed and fitted without a seam. Snug foot ...trim ankle...full curving graceful leg... all without a seam.

The correct new stocking is this sheer, elastic smartness . . . shaped as it is knit, complete, on the new Model K machine.

Established 1865

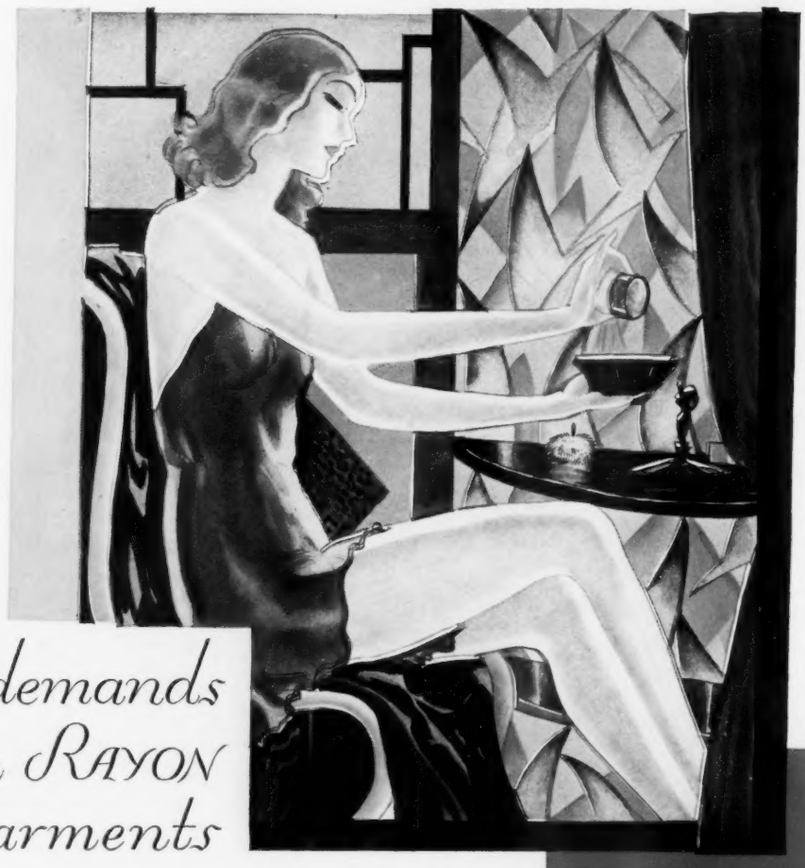
SCOTT & WILLIAMS
Incorporated
366 Broadway
New York, N.Y.



No seam to twist or mar the leg's sheer shapeliness.

The "Gussetoe"... the smooth, fitted foot... with no seam or ridge.

STYLE



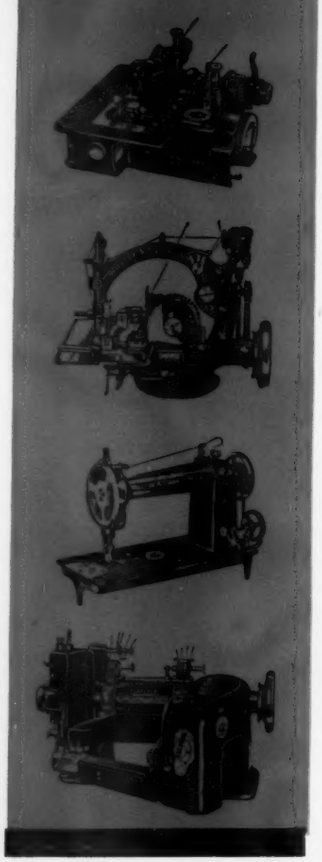
Good Style demands fine finish in RAYON undergarments

THERE can be no question that the *finish* of Rayon undergarments is a vital factor in securing 'style'.

Seaming and stitching *must* be as dainty as the sheerness of Rayon, Bemberg, Celanese or other synthetic fibres. That is why discriminating manufacturers select Willcox & Gibbs Machines.

The quality of their work is always up to high standards. And the careful, skillful W & G construction results in reliable and economical operation.

WILLCOX & GIBBS SEWING MACHINE CO.
658 Broadway, New York, N. Y., U. S. A.



WILLCOX & GIBBS

Write our Home Office for samples made on these machines, or submit your own fabrics for sample purposes.

Sole United States and Canadian agents for Cornely and Uniart Embroidery Machines.

Good needles make better operators . . . use genuine W & G Needles.

Hosiery School *at* Richmond Mill

An Account of an Interesting Course Which Has Been Successfully Conducted at Leading Southern Mill; First of Its Kind

By J. A. Crumley

HERE IS an enlightening report on a school in textiles and hosiery being conducted by a prominent southern mill, in conjunction with the State Board for Vocational Education. The fact that there is no standard course on hosiery will lend additional interest to this account, which describes in a general way the subjects being discussed at this school. It is published for the interest and information of other hosiery mills who may be carrying out or considering a course of this kind.—THE EDITOR.

SINCE SEPTEMBER of 1929, a hosiery textile school has been in operation at the Richmond Hosiery Mills, Rossville, Ga. This school, sponsored by the mill management, and under the supervision of the State Board for Vocational Education, has enjoyed a good attendance and bids fair to double the enrollment for the fall term.

The course of twenty units is a unique one, in that it is understood that a standard hosiery textile course has never been taught before. A glimpse at the units given later on in this article gives the impression at first that it is perhaps too complicated, but this has not proven so in the teaching. Some 25 students have enrolled for the course, and they come from three hosiery mills, a dyeing plant and a mercerizing plant. It is therefore evident that it is most necessary that the course be comprehensive in scope to cover the several interests involved.

The personnel of the school includes plant foremen, fixers, operatives, salesmen in training and clerical workers from the several statistical and record departments of the mill. One or more operatives from every department in the hosiery mill are enrolled in the school.

It is the purpose of the school to so tie up the various departments of the mill that operatives in one department can fully understand the relationship of their particular work to all other operations. This is particularly needed at times between the knitting and boarding and finishing departments, when, for example, differences arise in the sizing and grading of hosiery. The knitting department needs more first-hand information about the materials and supplies used, such as yarns and needles.

The students meet twice each week and have a two-hour session. In addition to textiles, other classes are taught in business English, spelling, general science and mathematics. The textile course has proven of such interest that quite often the discussion has lasted overtime, which is easily taken care of as this class comes last on the schedule. Note books are kept on textiles, and examinations are given at the end of each three units.

Rossville is adjacent to Chattanooga, which is quite a hosiery manufacturing center, and this has been quite a valuable asset in the textile class. As soon as a unit has been finished, the entire class goes in a body to a manufacturing plant engaged in the particular kind of work being studied, and views the actual work being done. Thus the connecting of the theoretical and practical manufacturing have done much to clear up any doubtful points, and this gives a much clearer insight into the manufacturing operations. These plant visits, of course, have been only where the processes are not actually used in our own mills. We are particularly indebted to the managements of the Standard-Coosa-Thatcher Company, the National Processing Company, and the Dixie Mercerizing Company for such plant visits. Charles B. Paulus, of the Laconia Needle Company, gave the class an interesting lecture on the manufacture of latch and spring beard knitting needles.

We have attempted something different from the usual run of textile courses, since the seventeen southern states engaged in vocational training education have no standard *hosiery* textile course. There are courses on weaving and spinning, etc., with supplementary fixing units, but none on hosiery. The teachers engaged in this work are Mrs. H. B. Combs, who is also a teacher in the part-time day school, and J. A. Crumley, manager of the stock control department of the Richmond Hosiery Mills.

Hosiery Textile Course.

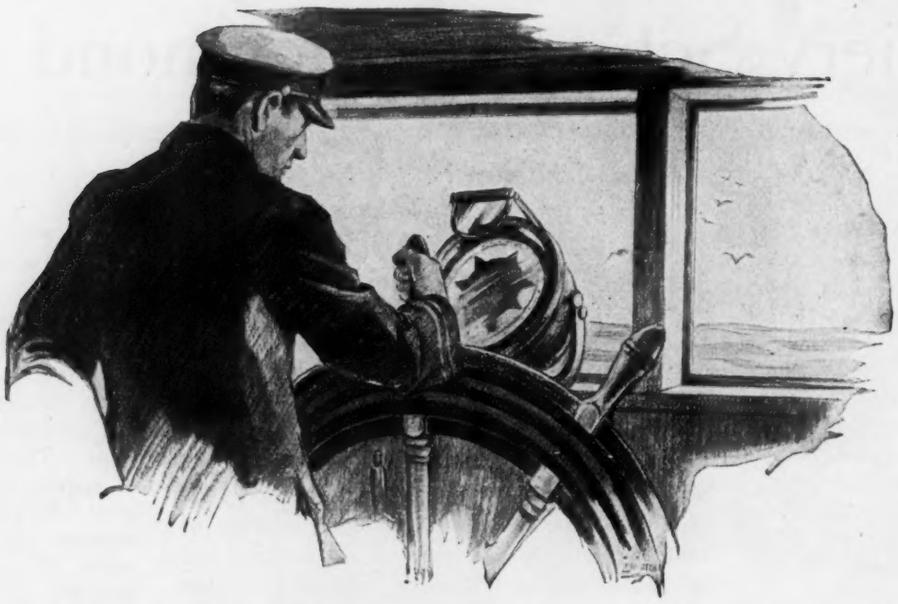
There are 20 units of processes, and a supplementary machine fixing course to parallel these. One hour is devoted to each.

Unit One—History of Textiles.

The early history of primitive peoples; their types of clothing; animal skins; grass threads; linen; wool spinning and twisting fibers; historical and biblical references to early textiles; legendary story of discovery of silk; spread of silk culture to the western world; cotton from India; King Cotton and its effect upon our civilization; present day problems concerning staple and grade; diversity of uses; search for silk substitute; the discovery of rayon; rapid rise of rayon and its various uses in application to the textile industry; development of twisting and drawing machinery into modern types; early knitting machines and their advancement into present modern models.

Unit Two—Materials to be Worked with and How Produced.

Wool. Sheep and different kinds of wool; relation of food to the length and condition; shearing; grad-



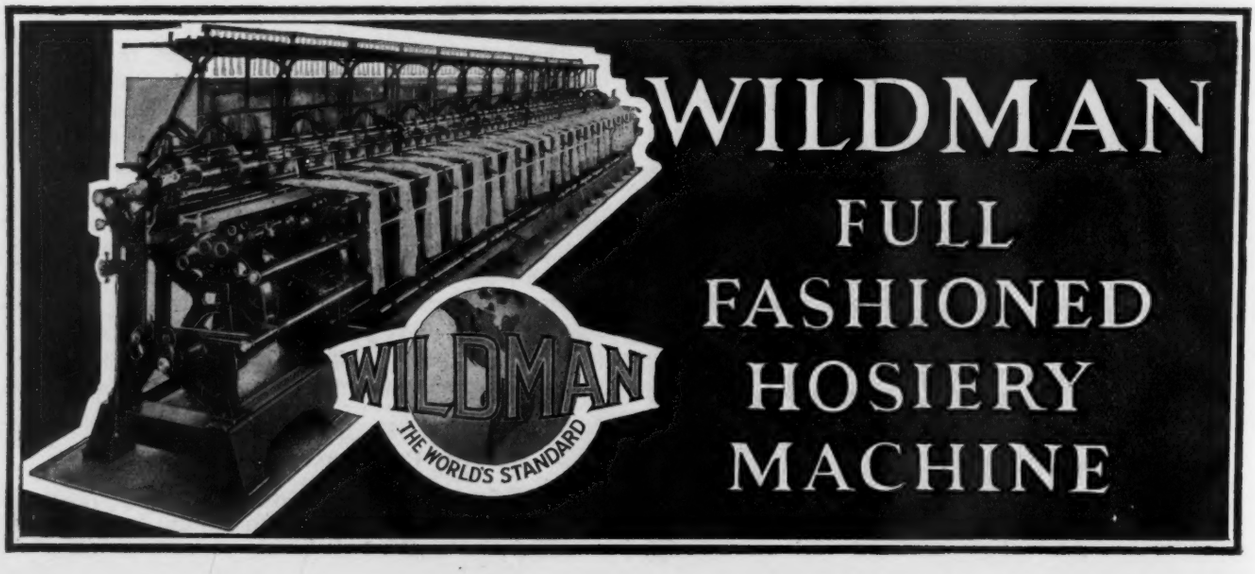
An ocean liner responds to the slightest turn of the wheel

Why? Because the modern steering mechanism has been properly designed and geared. Power replaces brawn.

The slow motion mechanism on the Wildman Full-Fashioned Hosiery Machine, too, has been designed to do away with unnecessary strong arm methods. It can be operated by a mere touch of the hand. A child could operate it.

Write for further information.

WILDMAN MFG. CO., *Full-Fashioned Division,* Norristown, Pa.



ing; dusting; scouring; drying; dyeing; oiling; blending; burring; picking; carding; spinning; relation of wool to hair in the animal kingdom; why wool shrinks; moisture content; coning.

Silks. Life cycle of silk worms from eggs to moth; food and preparation; silk worm culture; care and grading of cocoons; reeling of silk; steam filatures versus home reeling; re-reeling; grades and sizes; preparation for export; fast shipment necessary; Silk Exchange; special silk trains for cross-continent transportation; interest charges; Silk Association rules and practices; testing laboratories; commission agents; throwsters; throwing; soaking and softening baths; fugitive tinting of skeins; spooling; twisting; coning; moisture content; skilled operatives; after-treatments.

Cotton. Climatic conditions necessary; grade; staple; purchase types; Government standards; weights of bales; opening; picking; carding; sliver and ribbon lappers; combers; drawing; finisher drawing; slubbers, intermediates and speeders; spinning; coning; conditioning; single yarns; draft and sizes; spooling; right and left twisting; spooling; creeling; gassing; warping on beams; preparation for mercerizing; mercerizing; drying; splitting; quilling; coning; packing.

Rayon. Definition; four commercial processes; uses of each; cellulose and how prepared; pumping through spinnerettes; solidifying; spinning; skeining; neutralizing; bleaching; sizing; multifilaments; grades; de-lustering.

Combination Yarns. Rayon and silk; rayon and wool; rayon and rayon mixtures; Sase yarn; merino mixtures; rayon and cotton; silk and cotton; cross-dye mixtures; metalic mixtures; mock twist; analysis of combination yarns; percentages and value.

Yarn Sizes and Calculations. Basic weights upon which yarn standards are established; formula for determining weight; yardage; counts; conversion factors to figure wool; cotton; rayon and silk when interchanged on knitting machines; reeling and weighing to determine size.

Unit Three—Preparation of Materials for Knitting.

Skein dyeing, warp dyeing, package dyeing, conditioning, oiling, types of winding, cones versus bobbins, break test, moisture test, ageing, packing, humidity.

Unit Four—Types of Hosiery Machines.

Flat knit, circular types, full-fashioned, ribbers, products of each, diameter of cylinders, types of needles, kinds of hosiery on each.

Unit Five—Hosiery to be Produced.

Coarse gauge, fine gauge, fancy, ribbed; sizes, lengths, standards.

Unit Six—Elementary Mathematics (Part 1).

Follow standard cotton textile evening school course of study using practical hosiery mill problems. The study of fundamentals. (Part 2) Calculations, analysis, equations, and higher mathematics as applied to machines and processes.

Unit Seven—Mechanical Calculations.

Speed calculation of pulleys, belts, gears, lever calculations, gear ratios, mechanical problems and equipment.

Unit Eight—Motive Power and How Produced.

Steam, coal, B.t.u., boilers, temperatures, steam engines, rope and belt drives, gasoline engines, oil and Diesel types, electricity and how produced, principles, generators and motors, transmission, transformers, switches, voltage and amperage, alternating and direct current.

Unit Nine—Human Element Factors.

Employment departments, job analysis, working conditions, apprenticeship, wages, incentives and bonus plans, safety rules, basing rates.

Unit Ten—Cost and Production Factors.

Proper materials, cost standards, material assembly, production, time schedules, analysis of competitive stockings, sizing, fabrics, standard lengths, finishing calculations, and allowances.

Unit Eleven—Production.

Grades of hosiery, defects and imperfects, theoretical maximum production, relation of machine speeds to quality, requisites necessary to production, materials, operatives, machines, lighting, temperature and humidity, arrangement, inspection, records, piecework tags and systems.

Unit Twelve—Clipping and Looping.

Hand and power clippers, trimming, skilled operatives imperative, types of looping machines and advantages of each, hook and needle, yarns, two and three ply for looping, loose courses and their relation to production, trimmers, looper points, gauges, lighting, figuring percentage, defective work.

Unit Thirteen—Seaming and Welting.

Marker sinkers, mock fashion marks, yarns used, types of hosiery seamed, welting, elastic stitch needed, yarns used.

Unit Fourteen—Inspecting and Mending.

Separation of defects, charging against previous operatives, reclamation of defective hose, kinds of mending, grading by classes, separation for later dyeing operations.

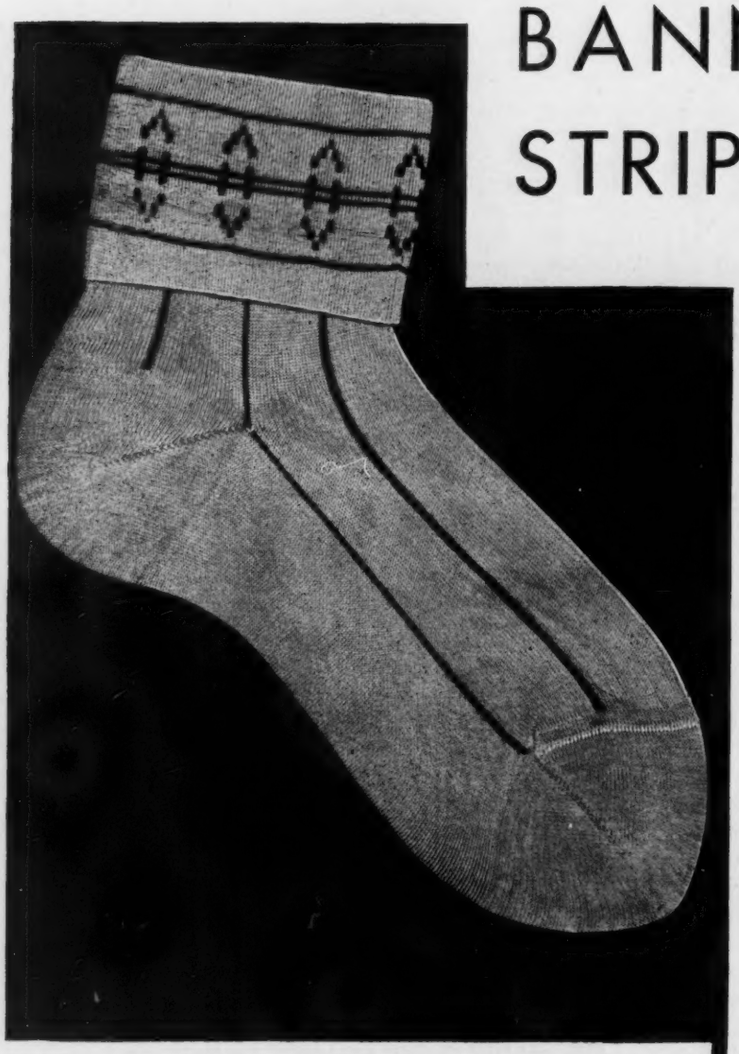
Unit Fifteen—Rough Stock Assembly.

Division of stock, ticket system, preparation for dyeing, lots and runs, records, matching fancy patterns, inventories.

Unit Sixteen—Dyeing.

Types of dye machines, processes of dyeing, temperature, water softness, chemicals and dyes, color matching, extractors.

NO IDLE MACHINES ON BANNER WRAP STRIPE ANKLETS



Child's anklet made of silk plated over rayon, two colors in the wrap stripes with the raised effect of hand embroidery; additional color in horizontal stripe in cuff, knit under wrap stripe ornamentation.

WHETHER the machine has started the style or whether the style has built a demand for the machine, the fact remains that all Banner Wrap Stripe Machines on misses', children's and infants' anklets are running full time. With 8 color feeds and the Banner horizontal striper this machine is the finest producer of high-grade anklets obtainable. Supplied with 3-inch, 3¼-inch, 3½-inch cylinders and as fine as 25 needles per inch, for silk, rayon or plated combinations . . . Reasonably prompt deliveries.

HEMPHILL COMPANY

Pawtucket, R. I.

93 WORTH STREET, NEW YORK

PHILADELPHIA 213 So. Broad St.

CHATTANOOGA James Bldg.

HIGH POINT Commercial Bank Bldg.

THE BANNER FULL AUTOMATIC WRAP STRIPE MACHINE

Unit Seventeen—Boarding.

Types of boards, adjustable toes, temperature, wooden boards, automatic boarders and strippers, lengths, finishing benefits by proper knit sizing, split lots, re-boarders, ticket systems.

Unit Eighteen—Finishing.

Inspection, pairing, grading, assembly of patterns, folding, box orders, boxing, types of packing, odds, re-boarders, re-dyers, imperfects re-graders, matching shades and samples, samples, export packing.

Unit Nineteen—Shipping.

Stock assembly, order clerks, receiving purchased hosiery, system of records, checking, back ordering, short lists, inventories, packing, billing, shipping.

Unit Twenty—Planning and Production.

Forecast of sales, planning production, machine changes, routing goods, control of production, percentage basis for colors, sizes and patterns, dye orders, inventories, purchase control.

The foregoing outline covers the high points used in the teaching of this course and some units are good for several weeks of study. The elaboration of any points in any unit will depend upon the type of hosiery manufactured and as we make every kind of hosiery manufactured, the course here is somewhat broad.

What Happens to Cotton in Carding?

(*Continued from Page* 1017.)

hooked around the cylinder wires and cannot easily be unhooked by forward flats on account of the high cylinder speed and the opposing direction of the wire points.

If the cotton is sufficiently raised by air currents at the front stripping plate and at the division sheet between the doffer and cylinder, a slow moving doffer, with its wire points directed opposite to the cylinder wire points, will be sufficient to take the greater part of the cotton from the cylinder. That this raising action has occurred is indicated by the fluffiness of the cotton on the underside of the doffer as compared with the embedded nature on the cylinder. This action is precisely analogous to that by which the flats at the back of the card acquire the bulk of the cotton from the cylinder wire and back plate in the first place. It is concluded that on a card with modern bends, carding can be effectively done with a considerably reduced number of flats.

As a result of these trials and theory and the large number of laboratory tests on the regularity and appearance of the products and staple length measurements, two new designs of carding engines have been constructed. The adoption of a considerably reduced flat chain permits the use of a smaller cylinder and therefore it was thought possible to augment the preliminary cleaning devices at the rear of the card while still not demanding increased floor space for any one card, or else to simplify the card, thus making it smaller and cheaper. Both types of cards have been constructed by Messrs. Platt Bros.

The additional cleaning devices (known as the modified card) consist of an additional licker-in elevated well above the central line of the cylinder. Between the primary licker-in, situated at the usual height, and the secondary licker-in, a pair of dust cages and suction device are inserted. The cotton is thus twice combed by the licker-in teeth, coarse and fine waste being thrown out to separate waste boxes and fine dust removed by a suction fan operating on the cages.

Trials have been made on this card at the Institute, using American and Sakel cottons. With the former cotton little trouble was found to arise from the suction device and the lap delivered from the cages on the secondary dish feed as well opened and very fleecy. Visually it seemed about twice the thickness of the normal lap. There was also a marked difference between the qualities of the wastes thrown out by the primary and secondary licker-ins.

With Sakel cotton the results were not so promising, for it was found that an oily piece of cotton or seed, such as is found occasionally in this cotton, was liable to start licking at the primary licker-in which finally became choked locally. Apart from this, the secondary lap was very well opened and ideal for presentation to the card cylinder. After a number of trials it was found that the powerful fan used was unable to prevent occasional licking and this type of construction was temporarily abandoned and work on the "simplified" card taken up.

The elevated licker-in is still retained and operates with the normal back plate in conjunction with a small diameter cylinder, (40 inches) and a reduced number of flats (48). No dust cages, suction trunk or lower take-in are used and the spare lap is placed below the one being carded. This construction gives a cheaper, smaller and more rigid machine; it is easier to set and less costly to run. The greater rigidity is an important feature in card design, since upon it depends the permanence of fine settings of the licker-in, flats and doffer to the cylinder. The number of flats in working position on the "simplified" card is 13-14. On the standard card it is usually 39-40.

It is not claimed that the "simplified" card does better carding than the standard card, but, taken as a whole, mill trials have proved that the standard card is no more efficient than the simplified card. These tests embrace Sakel, Texas and Boweds cotton, particularly good work having been done on the latter. In all mill trials the simplified card was run under the same conditions as the standard card with which it was compared the rates of production being the same for each.

If you gave a fellow a check for a thousand dollars and he just kept that check in his pocket the rest of his days to look at and show to his friends—what would you think of him?

Well, now, I think about the same thing about some overseers I know who have the opportunity to do something, but just put that opportunity in their pockets and keep it.

FIDELITY MULTI-DESIGN MACHINES have successfully met the test of practical operating conditions in installations, both large and small, in every hosiery manufacturing center in the world. A representative list of these installations together with complete information as to how you can profit through a Multi-Design installation will be furnished promptly on request.

FIDELITY MACHINE COMPANY
3908 Frankford Avenue
PHILADELPHIA, PA.

THE FIDELITY UNIVERSAL RIBBER

Two views showing some of the FIDELITY MULTI-DESIGN MACHINES in operation at the plant of Acorn Hosiery Mills, Inc., Reading, Pa.

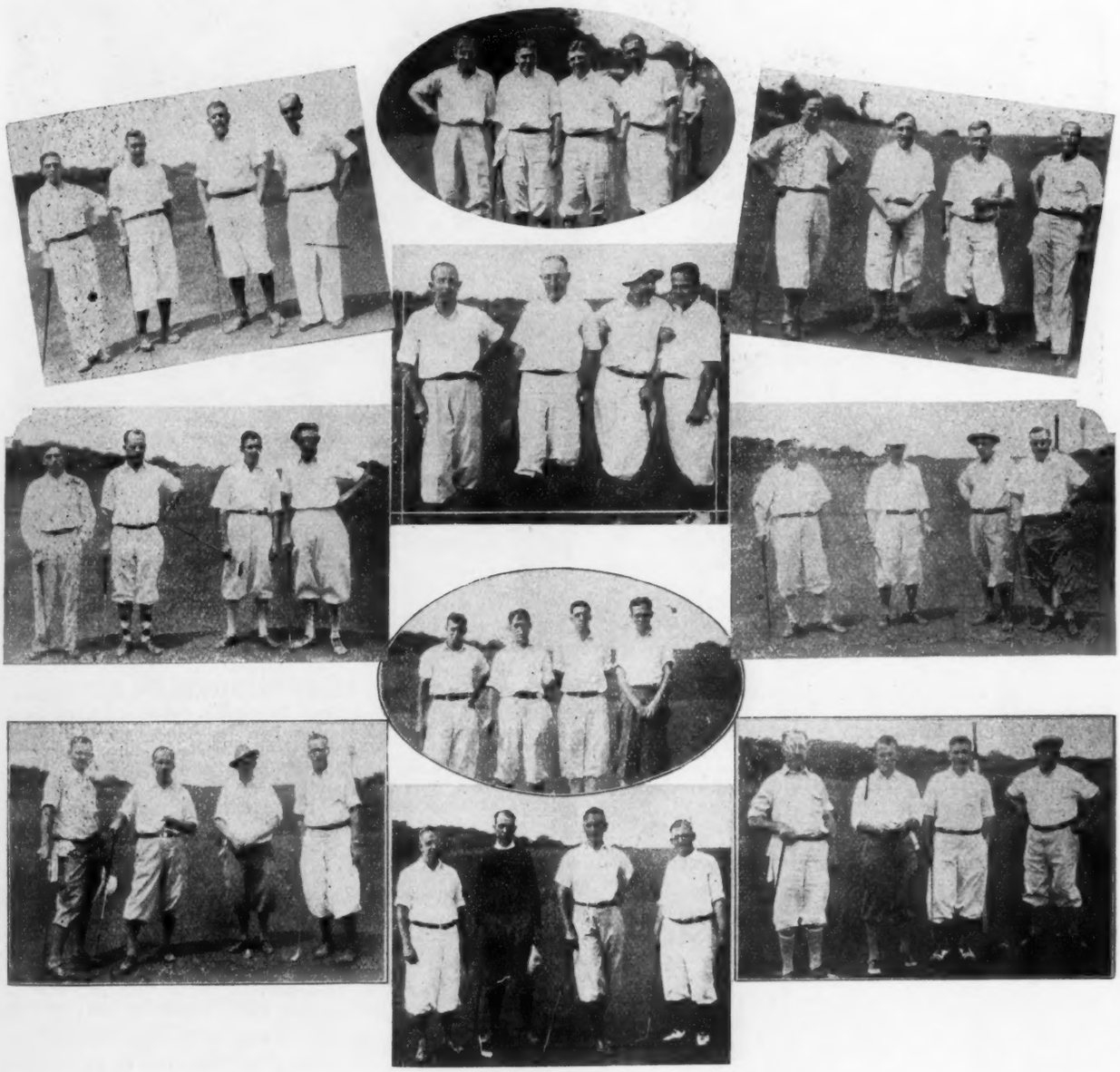
The Chattanooga Textile Golf Tourney

The fifth annual textile golf tourney of the Chattanooga Yarn Men's Association was held at Chattanooga on June 12th and 13th, with 20 regular foursomes in competition for the prizes. Participating were yarn and machinery representatives and knitting mill executives from southern mills.

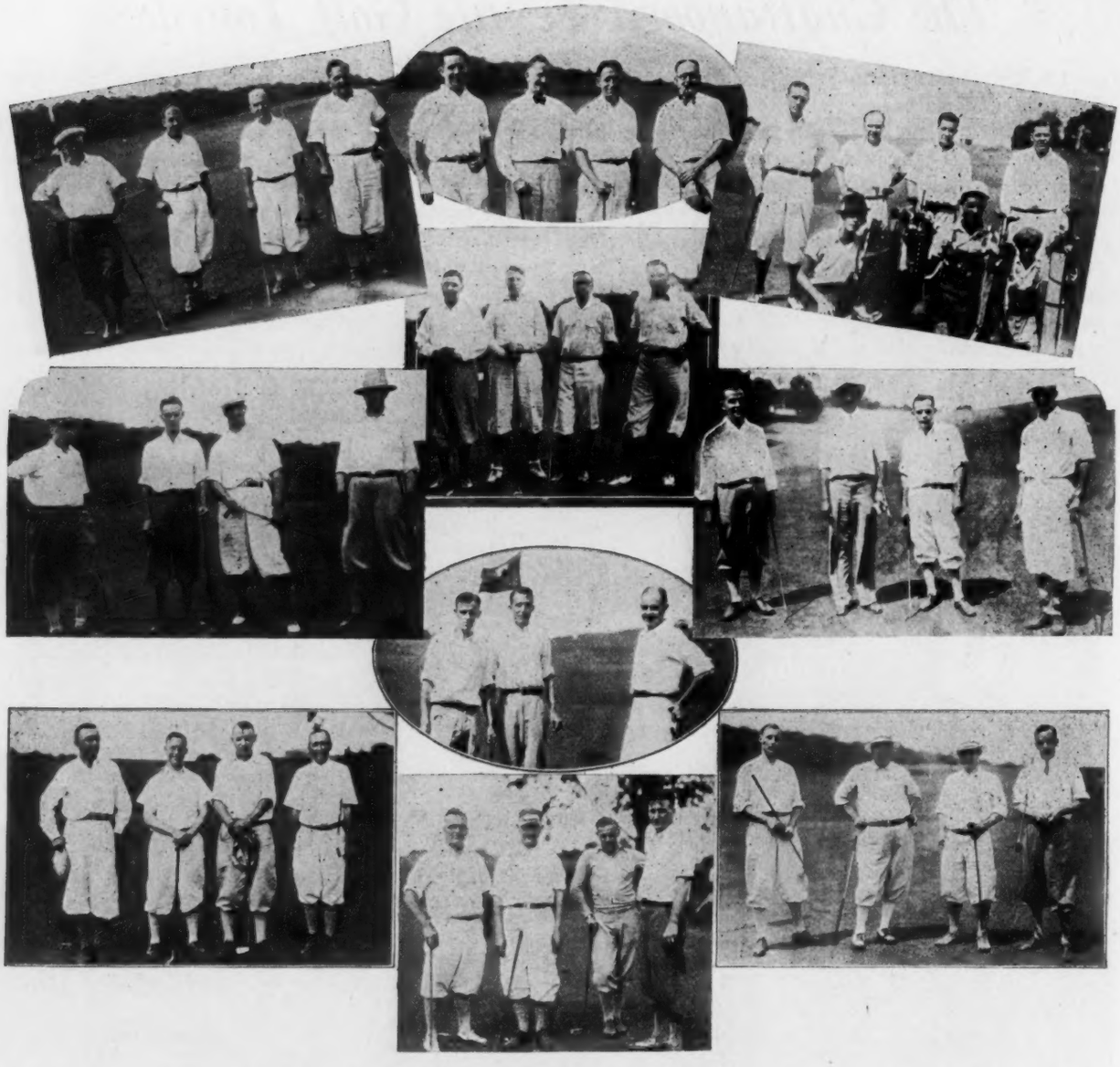
Features of the program were the tourney itself, 36 holes of play, a Tom Thumb golf tourney, and banquet. Robert Davis, of Fort Payne, Ala., won the tournament with low net score. Neil Ashe of Knoxville was runner-up.

Eighteen holes were played on Thursday, and a like number on Friday, with a miniature tournament on Thursday evening, and a banquet, with presentation of prizes, at the Country Club on Friday evening. Tom Moore, of the Yarn Men's Association, was in charge of the banquet. A musical program in charge of Wilbur Lawson of the Standard-Coosa-Thatcher Co., was presented.

The accompanying photographs showing all of the foursomes participating will be of interest. The prizes, winners and donors will be found listed on next page.



Across top, left to right: H. N. Cappell, Bob Sloan, Bill Purse and Ed McMillin. Don Hurlburt, Albert Diefendorfer, Clyde Wilkins and Wilbur Lawson. George Smith, Bob Mathewson, Lester Ross, George West. Across second line: Charlie Stokes, E. E. Pickard, Burton Frierson and Rody Davenport. Charles Hall, Jr., Dave Blevins, Rupe Aycock and George Porges. Gus Ganster, Francis Garrou, R. L. Bothwell and Adolph Scholler. In oval: Frank Cater, Jap Rickman, Bill Dupre and R. P. Shapard. Across bottom line: Hugh Griffith, J. C. Woodall, Doc Carter and Stanley Hart. Bob Potter, M. W. Walker, Dick White and Casey Holt. Dick Edge, R. L. Jackson, Paul Guggenheim and C. L. Jackson.



Across top, left to right: Dwight Williams, Walter Toy, Henry Bryan and Gray Henley. Joe Morton, Walter Higgins, Harry Robinson and Edwin F. James. R. H. Griffith, Dudley Bryan, Ed Elmore and Gene Thomason. Across second line: H. S. McInnes, Bill Steere, Andy Anderson and H. A. Vestal. John Lovell, Percy Adamson, Bob Davis and Tom McKinney. Neil Ashe, Sam Diggle, Dan Post and W. J. Rooke. In oval: Bob Barnhard, Claude Joiner and Henry Blake. Across bottom line: William Murphy, Alfred Thatcher, John Chrosnak and John Kain. R. D. McDonald, John Fowler, Bob Miller and Fred Lemmond. William Bentley, George Walker, Bert Cook and George Rounds.

The winners, prizes, and donors were as follows:

1. Robert Davis, W. B. Davis & Son, Inc., Fort Payne, Ala., and Chattanooga; Chattanooga Yarn Men's Association cup, which remains in the winner's possession for one year; silver cup which is permanent property of the tournament winner and silver goblets, given by the Dixie Mercerizing Co.
2. Neil Ashe, Ashe Hosiery Mills, Knoxville, Tenn.; matched woods, given by the Torrington Co.
3. Hugh Griffith, Chattanooga, matched irons, awarded by Industrial Rayon Corp.
4. B. S. Hart, American Glanzstoff Corp., Chattanooga; golf bag, presented by Kaumagraph Co.
5. Bill Dupree, Marietta, Ga.; silver plate, given by Oscar Heineman Corp.
6. Joseph R. Morton, Tubize Chatillon Corp., Greensboro, N. C.; silver dish, Adamson Bros. Co.
7. George Blackwell Smith, Miller-Smith Hosiery Mills, Chattanooga; glassware, by Hampton Co.
8. William Murphey, Signal Knitting Mills, Chattanooga; silver pitcher, by Standard-Coosa-Thatcher Co.
9. Bill Jackson, of Chattanooga; silver brushes, Southern Mercerizing Co.
10. R. P. Shapard, Spalding Knitting Mills, Griffin, Ga.; silver tumblers, by Aberfoyle Mfg. Co.
11. H. T. Bryan, Jr., Champion Knitting Mills, Chattanooga; silver cocktail set, given by American Glanzstoff Corp.
12. George R. West, Dixie Mercerizing Co., Chattanooga; golf bag, awarded by Tubize Chatillon Corp.
13. R. D. McDonald, Ingram Mfg. Co., Chattanooga; kit bag, given by COTTON.
14. John Fowler, Cartersville (Ga.) Mills; silver vase, by Paramount Textile Machinery Co.
15. John Kain, Chattanooga; matched clubs, by Fidelity Machine Co.
16. Ralph Holt, Burlington, N. C.; silver flask, by *Textile World*.
17. R. E. Miller, Cartersville, Ga.; Gladstone bag, by Johnston Mills Co.
18. Bert Cook, Aycock Hosiery Mills, South Pittsburg, Tenn.; clubs, given by Payson Yarn Co.

AROUND THE SEASONS WITH TORRINGTON LATCH NEEDLES

JULY ALMANAK

1930 July hath 31 days 7th mo.

The mower walks with scythe in hand,
To yonder field away;
The grass he prostrates o'er the land;
How sweet the new made hay.

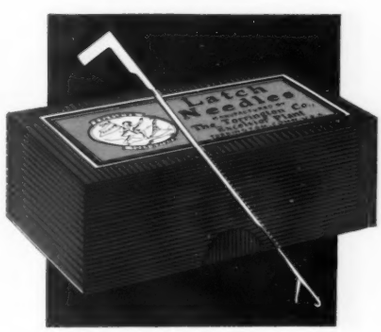
FARMER'S ALMANAK 1819-1930

THE heyday of summer is paralleled by the full tide of delightful knitted fashions. And this current sets strongly toward quality fabrics.

Torrington Latch Needles help to give your production an advantage . . . to place them in the class of demanded goods.

Torrington has applied years of precision manufacturing experience to producing needles satisfactory in every feature . . . accurate, uniform, smooth as satin in finish. Torrington Latch Needles are profit builders!

Also manufacturers of Torrington Full Fashioned Needles - standard for fine knitting.



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Torrington, Conn., U.S.A.

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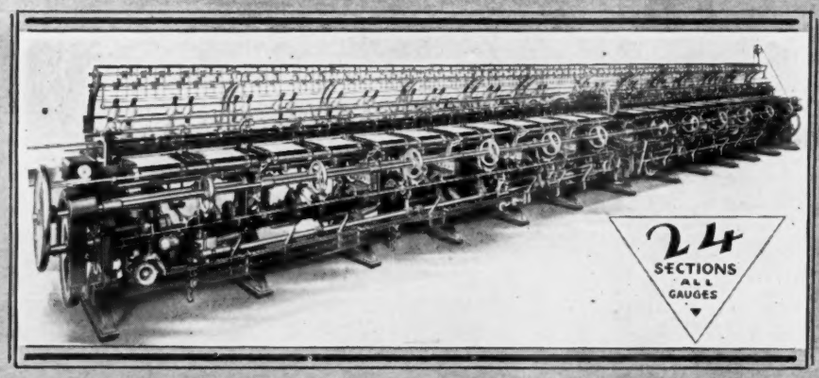


SCHUBERT and SALZER

TYPE H.S.L.

FULL FASHIONED HOSIERY MACHINES

IN EVERY TEXTILE COUNTRY

ON every continent and in every country where textiles are produced, you will find Schubert & Salzer Full Fashioned Hosiery Machines represented.

This world-wide acceptance of these machines is the logical outgrowth of a basic design which has been brought to its final stage of perfection only after over half a century of manufacturing. Speed --quality of fabric--long service.

Sold and Serviced in the U. S. A. by

ALFRED HOFMANN
INCORPORATED
West New York New Jersey

~~HIGH~~ ~~SPEED~~
65
COURSES PER MINUTE

What Causes "Hairy" Needles?

Readers who have experienced this difficulty with needles are urged to tell of their method of overcoming it.

EDITOR COTTON:

We are having considerable trouble with "hairy" needles in our 70-gauge, 280-needle, 3½-inch machines. They are the Model K. We would welcome suggestions that would assist us in overcoming this trouble. Various methods have been tried, such as lubricating the yarn, direct oiling of latches, etc., but without any great success. This, our greatest cause of needle replacement, is still with us.

I might mention that our machines run 24 hours a day, six days a week, and that we are knitting 8-thread pure silk and 100 denier rayon, with 3-thread silk mixture.

I would also like to know what is considered a good average needle consumption per dozen, under these conditions, on 70-gauge machines.

CONTRIBUTOR NO. 4718.

Backwinding versus Direct Knitting.

A variety of opinions and experience on this subject, which is of so much general interest at the present time. What do you think on the subject?

EDITOR COTTON:

I have noted the question of "CONTRIBUTOR NO. 4724" which was submitted for discussion by myself and others. For convenience, I will quote his inquiry:

"In our full-fashioned knitting room we have no humidifying system. We store our silk in an adjoining room, in which we have a number of humidifiers which blow the water spray over the silk.

"We are at present backwinding all of our silk, consisting of four, five, six and seven-thread, using a bleach glycerine softener, the mixture being one quart of softener to ten gallons of water.

"For some time now, we have been contemplating the installation of a conditioning room. Our interest in this was quickened recently by a statement that many mills, after installing a conditioning room, are eliminating the backwinding process. If, by the installation of a conditioning room, we can do this, we could pay for the room in two months, by the saving in backwinding cost, as we estimate that it costs from .03½ to .04 cents a dozen for backwinding.

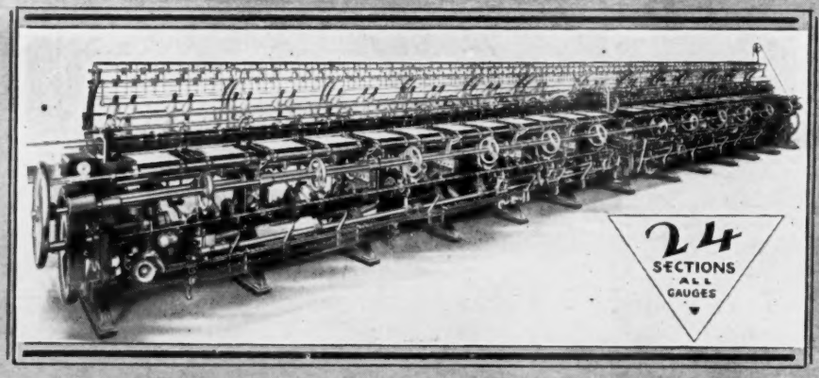
"I would very much like to have the opinion of your readers as to the advisability of abandoning backwinding where the silk is conditioned in a modern, properly installed conditioning room."

We invite our readers to make use of this department for the discussion of any and all problems arising in connection with the knitting mill from the office to the packing and shipping departments. Questions, answers or letters need not conform to any particular style and will be properly edited before publishing. All questions will be answered as promptly as possible. The names and addresses of the contributors must be given, but will be held in confidence and a pen name substituted when printed. All accepted contributions other than questions will be paid for after publication. The editors do not hold themselves responsible for any statements of opinion or fact which may appear in this department unless so endorsed. This department is open to all.

Thus, he wishes discussion in regard to making hosiery with silk that has not been backwound but would be conditioned in a conditioning room or what is called dry-package knitting. For his benefit, I might say that in recent years quite a number of full-fashioned hosiery manufacturers have done away with backwinding and are now making hosiery out of silk that is moistened in a room containing a humidifier, which sprays water on the silk.

I myself have experimented with dry package knitting, but will say that I have found that if one wants to make hosiery that is practically free from sleaziness the only method to use is to backwind the silk. I have found that silk that is sprayed with water through a humidifying system is not moistened evenly, and that only the top layer of silk receives the moisture. After a few sets of hosiery have been knitted from a conditioned cone, there is no more moisture in the silk and the result is that sleazy work is made.

To avoid sleaziness every inch of silk on the cone should be moistened and the only way to have silk moistened in this way is by backwinding. No matter how good the throwster will condition his silk, it is necessary in full-fashioned hosiery knitting that the silk be wound over an emulsion that contains something to keep the silk soft and moist. No full-fashioned hosiery manufacturer would think of backwinding over plain water because he knows that the moisture would not hold by using plain water only. But it does seem strange that these same manufacturers believe that silk can be conditioned by using plain water sprayed on the silk through a humidifier.



SCHUBERT and SALZER

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FULL FASHIONED HOSIERY MACHINES

IN EVERY TEXTILE COUNTRY

ON every continent and in every country where textiles are produced, you will find Schubert & Salzer Full Fashioned Hosiery Machines represented.

This world-wide acceptance of these machines is the logical outgrowth of a basic design which has been brought to its final stage of perfection only after over half a century of manufacturing. Speed --quality of fabric--long service.

Sold and Serviced in the U. S. A. by

ALFRED HOFMANN
INCORPORATED
West New York New Jersey

HIGH SPEED
65
COURSES PER MINUTE

What Causes "Hairy" Needles?

Readers who have experienced this difficulty with needles are urged to tell of their method of overcoming it.

EDITOR COTTON:

We are having considerable trouble with "hairy" needles in our 70-gauge, 280-needle, 3½-inch machines. They are the Model K. We would welcome suggestions that would assist us in overcoming this trouble. Various methods have been tried, such as lubricating the yarn, direct oiling of latches, etc., but without any great success. This, our greatest cause of needle replacement, is still with us.

I might mention that our machines run 24 hours a day, six days a week, and that we are knitting 8-thread pure silk and 100 denier rayon, with 3-thread silk mixture.

I would also like to know what is considered a good average needle consumption per dozen, under these conditions, on 70-gauge machines.

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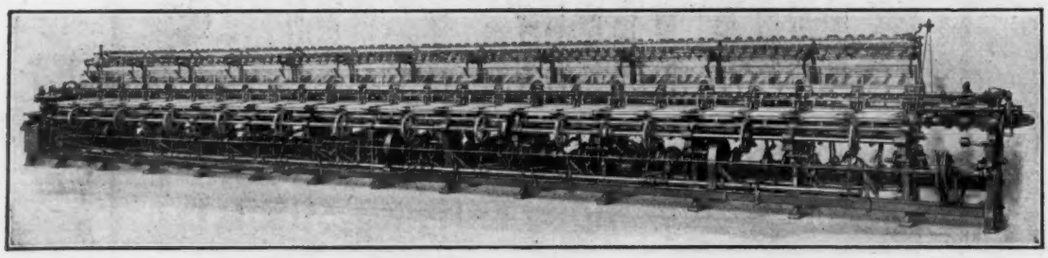


The Reading Full-Fashioned Knitting Machine as it stands today — after 32 years of development — is the lowest priced, highest producer ever offered.

Is this a record?

Scarcely three months ago a new mill* located *in virgin territory* started operating with Reading Machines and a green crew. Today these newly-trained knitters are producing 18 dozen pairs per machine per shift.

If this is a record you can duplicate it —provided you give your apprentices the advantages of Reading Full-Fashioned Knitting Machines.

*Name on request.

TEXTILE MACHINE WORKS - READING - PENNA.

The "READING"
Full-Fashioned Knitting Machine

Sleaziness in silk hosiery is one of the big evils of the full-fashioned hosiery business and without a question of a doubt, there is nothing more unsightly than a sleazy silk stocking. Dry spots in the silk are the principal causes for sleaziness, and therefore the first thing a full-fashioned hosiery manufacturer must do is to find the best way to keep the silk moist throughout the entire cone. Nothing as yet has been found or invented that will moisten silk evenly, other than backwinding. True, it costs a few cents to backwind silk, but this cost is nothing in comparison to the fabric that one secures free from sleaziness.

Manufacturers operating 39- and 42-gauge machines with dry package silk are fairly successful with the method because the coarser the gauge the less trouble one has with sleaziness. When operating 45- and 48-gauge machines on dry package knitting, the results obtained are not so good and on these fine gauge machines, one should use backwound silk only.

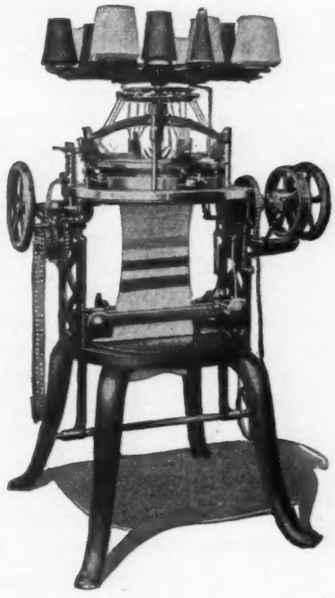
I do recommend, however, that a conditioning room be built for the purpose of storing backwound silk with the idea of keeping the moisture in the silk at all times. The humidifier, however, should be such that it sprays a fine spray of water into the room and under no circumstances should a humidifier be installed where heat is required also. Heat will start the silk to sweat and result in mildew or mold forming on the silk in a short period of time.

For the benefit of those interested, I will outline how my silk is conditioned before placing it on a knitting machine. I backwind all silk over a backwind solution. My silk is wound on a waxed paper cone, perforated with holes, so that moisture from the conditioning room can enter into the silk from the inside of the cone as well as the outside of the cone. I have a conditioning room that has been painted so that it is waterproof, the waterproofing being done through the painting of the walls with laboratory enamel. Wooden pegs slightly tilted are built along the walls of the room and on these pegs we place the silk. After the silk is backwound, it is put into the conditioning room for from six to twelve hours.

Through this conditioning and also backwinding, the moisture has penetrated through every inch of silk wound on the cone, and the result is that no dry places come up in the silk that would cause sleaziness. In our conditioning room we have an opening to allow air to circulate in the room to prevent silk from becoming moldy. In the summertime, we place a pan containing formaldehyde in a corner of the room to also prevent mold on the silk. No heat is in the room, as the cooler the room, the better the silk will keep.

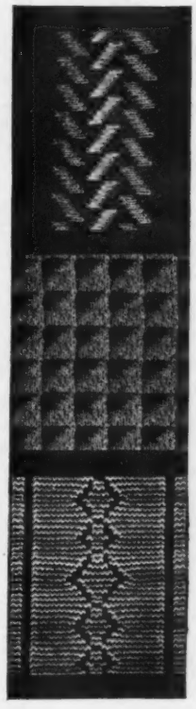
I do not want to have the contributor feel that I am condemning dry package knitting, as some manufacturers state that they are successful with this method, but I do suggest that if anyone does intend to discontinue backwinding, that they had better try dry package knitting on a few machines only and compare the results. I only know my results on dry package knitting were very discouraging because of the fact that I have always tried to make hosiery

CIRCULAR
BRINTON
KNITTING
MACHINES



Rib and Sinker Top Machines for Plain and Fancy effects.

OUTERWEAR MANUFACTURERS



assure the success of your merchandise by making them on Brinton's. They will perform up to your expectations if Brinton's knit them.

Brinton Knitting Machines are the biggest backing that you can give your sales force — the biggest help to your jobbers and retailers — the biggest value to the ultimate consumer.

Let us send you full information of our line

H. BRINTON COMPANY
3700 Kensington Avenue
Philadelphia, Pa.

with the least amount of sleaziness possible, and when I experimented with dry package knitting, I could not prevent sleaziness because I was unable to secure the evenness of moisture that I can secure through backwinding.

C. H. BAXTER.

EDITOR COTTON:

I have noted the inquiry from "CONTRIBUTOR NO. 4724." He asked about the advisability of installing a conditioning room for silk to be used in full-fashioned; and he wants the opinions of some readers as to the advisability of abandoning the backwinding process where the silk is conditioned in a modern, properly installed conditioning room. At the present time, he says that he has no humidifying system in his knitting room, storing his silk in an adjoining room which is equipped with humidifiers.

I will go on record as endorsing a humidifying system of the correct type for a knitting room of any kind, whether cotton, rayon or silk. I likewise strongly endorse a conditioning room for either rayon or pure silk where such rooms are properly constructed and regulated. A conditioning room without satisfactory temperature and humidity control is of little real value as compared to rooms where conditions are controlled to a predetermined satisfactory point. It is a well known fact that humidity cannot be controlled at a predetermined point except by a uniform temperature agreeable to that point.

In recent years many types of conditioning rooms for raw silk have come into being, representing anything from a hole in the ground to cement vaults, and the general sentiment seems to be that so long as silk is placed in some kind of a room where dampness is noticeable, that satisfactory conditioning will be obtained. This conviction and practice is far from the fact, and many of the so-called conditioning rooms are of little real value. Following along in the trail of conditioning rooms have come the throwster's soft soak and so-called direct knitting cones. That some good knitting and satisfactory fabric has been produced from direct knitting cones will not be denied; but that uniformly satisfactory results can be obtained from this method is seriously questioned.

I would unhesitatingly advise "CONTRIBUTOR NO. 4724" to proceed with the installation of a conditioning room, basing his procedure on competent engineering advice. After a conditioning room has been installed and found to be in satisfactory operation, he can then test out direct knitting with a view of saving the small cost of backwinding. However, I would not advise him to do away with his winders, as I am quite convinced that a short period of careful follow-up on direct knitting as compared with backwound and conditioned silk will show the folly of abandoning the backwinding operation.

Briefly summarizing his inquiry, I would say: backwind the silk through a good soaking solution, place in a conditioning room for six to ten hours, then place the silk in humidors on the back of the knitting machine and operate the knitting machine in humidified air; and by following up all of the different processes in a careful way it will be possible to reduce sleazy knitting and other unsatisfactory fabric conditions to a fairly satisfactory minimum.

CONTRIBUTOR NO. 4725.

Proper Size of Seaming Thread.

Here is another opinion on this subject. If you have anything further to offer, please let us hear from you.

EDITOR COTTON:

You recently published a letter from "CONTRIBUTOR No. 4622" with reference to the proper size and kind of seaming thread, to use for a Scott & Williams Model K 3½-inch 260-needle seaming attachment. He stated that he uses 50s/3 mercerized, which gives trouble making large loops in making the seam. He pointed out that some of this trouble is due to snagging trouble when the transfer is made off of the welt, and some of it is due to other causes. He said that it was his impression that he might not be using the proper kind and size of seaming thread, and wished some suggestions on this point.

The 50s/3 thread that he is using does not seem to me to be too heavy, but I would suggest that he try a 70s/3, and if that does not overcome his trouble as to loops, then put the 50s/3 back on the machine and move the outer chain link just as close to the transfer link as possible, allowing about ¼-inch of fabric to be knit before putting in the seaming thread after the transfer is made. This can be done by cutting the drum cam that puts in the seaming finger. I suggest this because I do not believe that this man uses the latest model machine, because the manufacturers are putting the seaming thread in just a little differently from the method used on the older models. Of course it is understood that the dials must be kept smooth.

CONTRIBUTOR NO. 4738.

Preventing Smash-Ups.

A short description of an idea that has proven of value to this man. Similar "kinks" from other readers will be welcome.

EDITOR COTTON:

All men in knitting mills know that there is enough natural wear, without permitting unnecessary wear, and I would like to tell in this letter of a means I have of preventing smash-ups on Scott & Williams type machines. This may seem to be a small matter, but it is a very vital point. The part that wears does not cost so much, but the wearing will cause a great deal of trouble.

As you know, plate 8012 is ordinarily left to ride the chain at all times, and in riding it, wear is its constant enemy. This particular part is the heart of the whole machine. If it is left to go wrong, the whole machine can get out of time. It is the little things that keep a fixer on the jobs, anyhow, and not the big ones.

This plate 8012 is fastened to the ratchet pawl lifter (6027), and the ratchet pawl lifter is held in

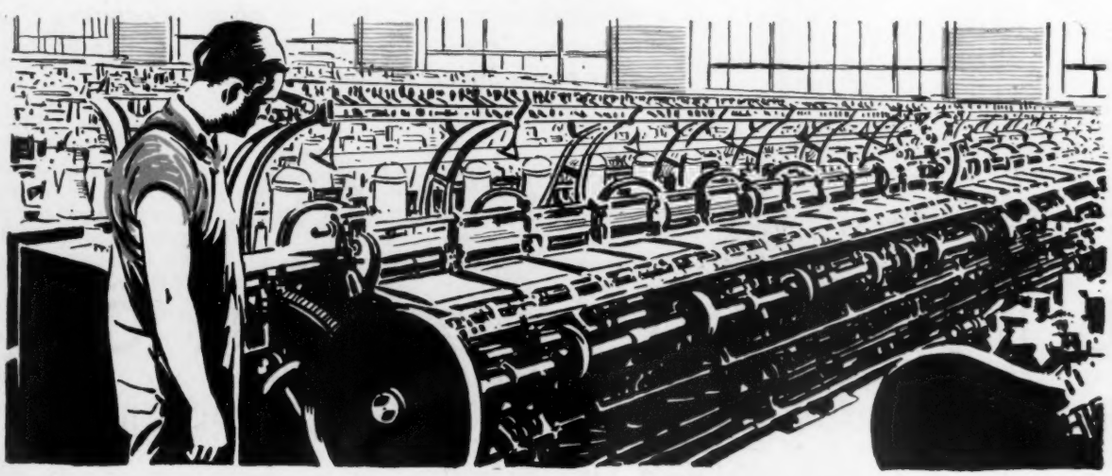
Good Machinery Deserves Good Yarn

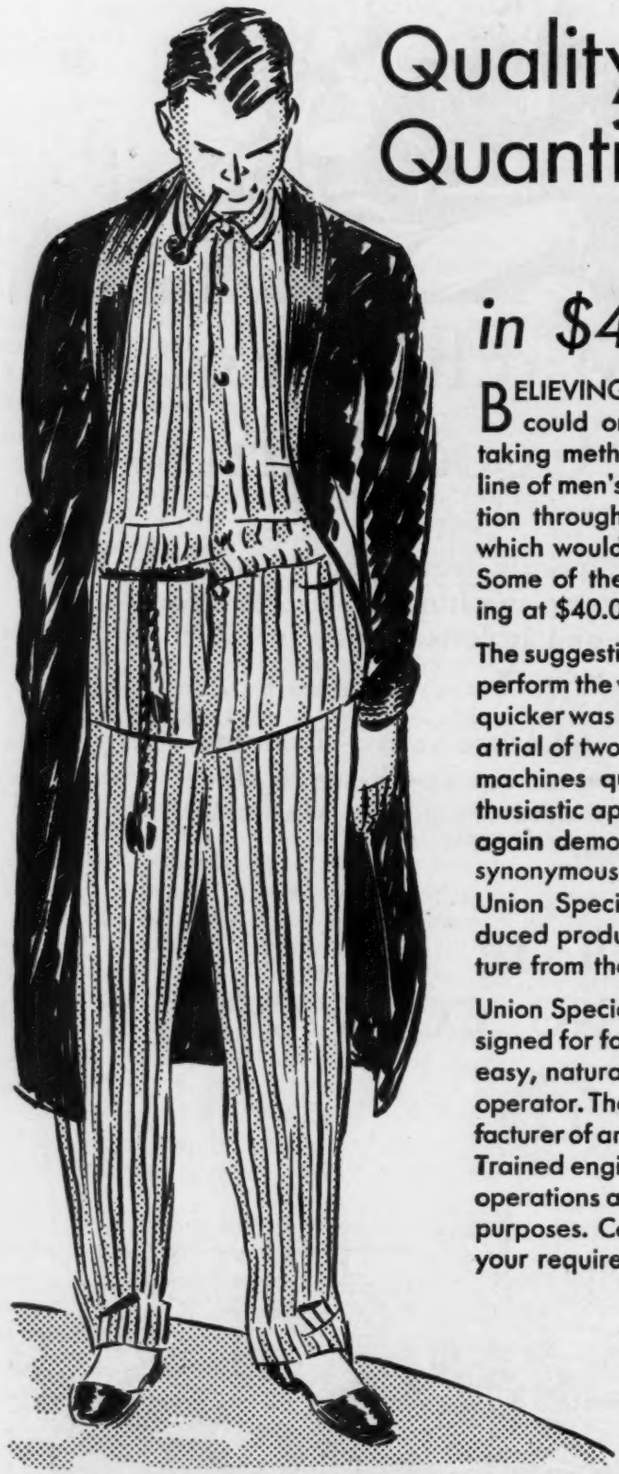
WHY put knotty, poorly wound yarn on a high-priced knitting machine? The result is never satisfactory—and it costs money in low output and excessive seconds.

Try Dixie durene and Dixie yarns. Examine your records after the run. You'll agree that your good machinery deserves good yarn—and that Dixie is good yarn.

DIXIE MERCERIZING COMPANY

CHATTANOOGA TENNESSEE





Quality Product . . . Quantity Production *Combined in $40 Pajama Suits*

BELIEVING that seaming on quality garments could only be accomplished by slow, painstaking methods, the manufacturers of a famous line of men's pajamas sacrificed time and production through their desire to produce a garment which would be considered the finest of its kind. Some of these are of highest quality silk retailing at $40.00 per suit.

The suggestion that Union Special machines could perform the various seaming operations better and quicker was unbelievable to the manufacturers, yet a trial of two Style 7400-A and one Style 35700-A machines quickly changed these doubts to enthusiastic approval when Union Special engineers again demonstrated that quality could be made synonymous with quantity. The installation of ten Union Special machines which followed has reduced production costs materially with no departure from the same uniformly high quality.

Union Special Industrial Sewing Machines are designed for fast work of the highest quality, and for easy, natural methods of handling that help the operator. These features are valuable to the manufacturer of any product requiring sewing operations. Trained engineers are continually developing new operations and new methods for all manufacturing purposes. Complete data on types adaptable to your requirements will be sent upon request.

UNION SPECIAL MACHINE CO.

Makers of Special Sewing Machines for all Manufacturing Purposes

400 NORTH FRANKLIN STREET » » » CHICAGO, ILLINOIS

C6-Gray

the proper place on the shaft (6502) by means of a screw (6689), and this shaft is held rigid by two screws (15109) to the frame of the machine.

My idea is to loosen the screw (15109) and raise the ratchet pawl lifter up high enough so that the plate (8012) does not touch the chain plain links. Then turn the shaft (6502) back until the screw (6689) will not let the plate (8012) back down on the plain chain links. Then tighten the screw (15109), but make certain that it is not too high (as the machine might get the short kicks from that).

This adjustment is only made to prevent the plate (8012) from riding on the plain link, but it must engage every lug on the chain.

I believe if your readers will check up on the machines on this point and correct this trouble, they will find that they will have less running out of time, less adjusting, better satisfied knitters, less long waste, and fewer smash ups.

W. C. (S. C.)

Among the Knitting Mills

LAUREL HOSIERY MILLS, Laurel, Miss., recently moved their machinery and equipment to Waynesboro, Miss. A large number of the operatives also made the transfer with the company.

Work on the addition to the Bossong Hosiery Mill, Asheboro, N. C., which will double the capacity of the mill, is said to be progressing nicely. This mill manufactures full-fashioned silk hosiery.

It has been announced that Junius C. Harden, of Burlington, N. C., is planning on establishing a hosiery mill in Sanford, N. C.

Hoover Hosiery Co., Concord, N. C., manufacturers of full-fashioned hosiery, are increasing their production 25 per cent.

Robins Knitting Co., High Point, N. C., manufacturers of men's and women's seamles hose, have moved to their new building. This plant has 225 circular machines.

Shoaf-Sink Hosiery Mill, Lexington, N. C., are installing 50 new 340-needle high grade silk knitting machines in addition to the fifty installed a short time ago, making the total 290 machines.

Tom J. Cauley, of Nazareth, Pa., recently secured charter for Valley Knitting Mills, Inc. He will build a knitted wear plant at Middle Wheeling Creek, Wheeling, W. Va.

Engineers are inspecting sites for the $1,000,000 hosiery mill that is to be located in Corinth, Miss., by the Knit Goods Corp of America, which will manufacture full fashioned silk hosiery. The engineers on the job are E. D. Smith and G. N. McTier of Greenville, S. C.

It is reported that Cullen & Boren are to soon begin the installation and operation of machinery in a knitting plant in Dallas, Texas.

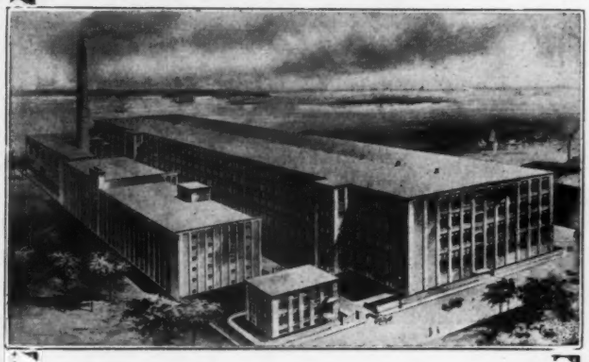
The Superior Hosiery Mills, the latest mills to locate in Lexington, N. C., is now in operation, having recently completed the installation of a finishing plant as an addition to the hosiery manufacturing department. The new plant manufactures a high grade of men's hose, and has a capacity of between 400 and 500 dozen pairs of hose per day.

It was recently announced that a new hosiery manufacturing company will become located in Graham, N. C., at an early date. They will manufacture a special class of fine hosiery.

Carmichael Hosiery Mills and McDonough (Ga.) Hosiery Mills recently installed additional machinery and have enlarged their floor space. Both plants are in operation on full time.

Haw Hosiery Mills, Haw River, N. C., manufacturers of half hose, have resumed regular operations.

Quissett Mill
New Bedford, Mass.



COTTON YARNS

Begin with Quality
to
End with Quality

IN the textile field, as well as in most other industries, it pays in the long run to use only quality materials in the manufacture of products.

Take yarn for instance. Any weaver or knitter who has shopped around on a price basis has come back to his former quality brand. He found from experience that it is more economical in the end to specify quality yarn. It invariably means more satisfaction, more business, more profits.

Quissett Yarns are made in all counts and put up in many packages—but there is only one quality—the BEST for each type of product.

QUISSETT MEANS QUALITY

Wm. M. Butler, Pres.
Edward H. Cook, Treas. Thomas F. Glennon, Agent

The YARN MARKET

Philadelphia, Pa., June 14th, 1930.

IT WILL BE RECALLED that the one bright feature that was depicted in the report here last month was the unusually good credit situation that existed. Aside from this, though, very little can be said for activities during the past month in the yarn market. It will be remembered that very, very few sales took place.

Indications during the first week of the past month were that the business depression in the yarn market had reached the bottom, and that an upward trend of business in the near future was inevitable. There were quite a few representative houses that reported increased inquiry from knitters. They stated that they did not expect any large immediate increase in buying, as the chances were that the majority of buying for the next few weeks would continue to be of the hand-to-mouth variety, but that an increase in inquiries was certainly worth mentioning.

It was reported that the average spinner of cotton yarns was giving more real service to customers than ever before, and at no extra cost to the customer whatsoever.

Cotton yarn houses and spinners' agents during the next week were offering ordinary quality carded weaving and knitting yarns, both white and tinged, at lower prices than had heretofore been recorded in the local market. The reduction averaged about half-a-cent a pound in carded weaving yarns, which placed the new lower level at about 28½ cents for 20s two-ply. In the carded knitting yarn group, 25 cents was generally quoted for 10s frame spun cones. This reduction was restricted mainly to the coarser counts. The approach of the three day week-end holiday had the usual effect of restricting business the latter part of the week.

Local yarn distributors stated during the next week that many yarn mill men were pleased with the manner in which they had been receiving orders lately, pointing out that June was starting out much better than either April or May. In other words, a real improvement in specification of deliveries on standing contracts had taken place, yet a substantially broader movement of yarn still remains a much needed development.

It was recently learned that some spinners have been able to reduce measurably the amount of fixed charges they would have to pay if they shut down, due to the fact that power companies in parts of the South have agreed temporarily to waive the minimum service charge provided for in the power contracts, thus permitting the yarn mills to pay only for the power they consume. It is believed that this will lend much needed encouragement for further curtailment by sale yarn mills. It was pointed out that the less available stock there was on hand, the sooner spinners and dealers would be able to work yarn rates up to a profitable basis again.

Probably the most significant items of interest during the present report period were reports showing extension of curtailment among mills making yarn for the markets and those indicating improved movement of cotton merchandise through retail channels.

It was pointed out that it was very evident that prices were being made unusually attractive in other large centers of the country, but in the local district, particularly, values were being offered the public that have not been equaled in years.

It was conceded by most yarn men that more active retail clearance of merchandise may be a long time in showing favorable influence by way of orders placed with cotton goods manufacturers, but it was believed that improvement in the general business situation had made a beginning.

Philadelphia prices on June 13th follow:

Single Skeins.

4s to 8s	23	10s	23½
12s	24	14s	24½
16s	25	20s	26
24s	28	26s	29
30s	30½		

Single Warps.

10s	24	12s	24½
14s	25	16s	25½
20s	26 @26½	26s	30
30s	31		

Two-Ply Skeins.

8s	23½ @24	10s	24
12s	24½	14s	25
16s	25½	20s	26 @26½
24s	29	26s	30
30s	31	40s	39

Two-Ply Warps.

10s	25	12s	25 @25½
14s	25½	16s	25½ @26
20s	26½	24s	29½ @30
26s	30 @30½	30s	31½ @32
40s	39		

Frame Spun Carded Yarn on Cones—Cotton Hosiery Yarn.

8s	23½	10s	24
12s	24½	14s	25
16s	25½	18s	26
20s	26½	22s	27½
24s	28	26s	29½
30s	31 @31½	40s	38
30s dbl. carded	34½	30s tying in	30½

Carpet Yarns

8s and 9s white warp twist	22
8s tinged tubes	20
8s part waste	18

Two-Ply Combed Peeler Skeins and Warps.

8s to 16s	41	20s	43 @44
24s	44 @46	30s	47 @49
40s	52	50s	55
60s	62	70s	72
80s	84		

Single Combed Peeler Yarn on Cones.

18s	38½ @39	24s	42 @42½
30s	46½ @47	36s	48½
38s	49½	40s	50½
50s	55	60s	62
70s	72	80s	84

Single Mercerized Yarns.

30s	77	36s	78½
40s	80 @83	45s	84 @85
50s	87 @90	60s	94 @99
70s	1.10@1.15	80s	1.32@1.37
90s	1.75	100s	2.05@2.15

Two-Ply Mercerized Yarns

20s	59	26s	61
30s	62	36s	65
40s	67	50s	72
60s	80	70s	94
80s	1.07	90s	1.40
100s	1.70		

Northern Mule Spun Carded Yarn on Cones.

10s	30	12s	30½
14s	31	16s	31½
18s	32	20s	32½
24s	35½	26s	36
30s	37	40s	44

THE #40 UNIVERSAL WINDER

The new principles of construction embodied in the #40 machine are such as to give practically unlimited speed of operation so far as the structure of the machine is involved. In the practical use of the machine in mills, the determining factor regarding speed will rest upon the numbers and quality of yarn, and the proper allotment of spindles to the operator to give the greatest productive efficiency and economy of operation.

Reciprocating parts have been eliminated as in the use of these there is a definite economical speed beyond which there is excessive wear of machine parts, increasing the cost of upkeep and adding materially to the power required in operation.

ECONOMIES

Saving in power — saving in upkeep—increased production per spindle--increased durability — increased capacity of operator.

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305

UNIVERSAL WINDERS

"Dernière Piècle"... National design on lemon yellow taffeta ... black shaded to grey.

"Longchamps"... Shantung Rayon ..... with original National design

Reg. Trade Mark

VERVE and dash of the races ... smart chic of luncheon at the Casino ... sure, poised elegance of evening on the saloon deck.

Alert style consciousness.

It is the touch which National adds to skillful and experienced processing.

The Scope of National Service
Piece Dyeing—Weighting—Finishing—Moire—Hosiery—Roller and Screen Printing—Rayon and Celanese—Ribbons—Skein Silk—Knitted Fabrics—Mixed Goods.

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Paterson, N. J.

General Offices: East Paterson, N. J.
New York Salesroom: 152 Madison Ave.
Works: Paterson, N.J., East Paterson, N.J. Allentown, Penn., Williamsport, Penn.
Canadian Branches: Dominion Silk Dyeing and Finishing Company, Limited; Dominion Silk Printing, Limited, Drummondville, P. Q., Canada.

"Rhangoon"... chiffon velvet ... cocktail jacket or negligee ... sand ground, rouge fade stripes and biege-brown plaiding design.

NATIONAL

The KNIT GOODS MARKETS

IT IS BECOMING APPARENT to some observant factors in the marketing of hosiery that conditions have reached a stage where a change for the better for some interests very soon and later for the industry at large must be at its beginning. Henceforth, for a time, it will be less a matter of custom than of overcoming seemingly minor obstacles by individual mill organizations.

That success in marketing at the mill will be measured by the extent to which manufacturers may go in producing the best silk stocking—or stockings of any other acceptable fiber—for the least cost to the buyer for the trade, hardly will admit of dispute. The problem will be—and certain manufacturers will find the solution—how to eliminate operating costs which do not contribute to the merits of the product. This contemplates establishing and maintaining mutually profitable relations with the more desirable class of buyers. There is another class with which, in existing conditions, it cannot be profitable to the manufacturer to supply hosiery at any price, unless he plays his wits against the "clever" buyer's and manages to beat him at his own game. It is and for some time doubtless will be easier for the producer of cheap hosiery, in which quality is as low as the price to sell volume, than to market legitimate goods on a legitimate basis.

It is obvious that mass production can be obtained without lifting a few needles from full-fashioned hosiery or knitting ten or more stitches per inch less than buyers of meritorious stockings have a right to expect. But that mass production, to be made profitable to the mill, has got to be of goods that appeal to women who shop and those who buy helter-skelter without spending time in shopping.

A Philadelphia mill a few weeks ago had occasion to resume operation of its 39-gauge equipment, which had been idle for some time, while the remainder of the plant was in production two days a week. The market was by no means short of stockings of that gauge, and some mills were engaged sixteen to twenty hours a day in producing it, along with even coarser. But it was cheap hosiery, for cheap trade buyers. Then the stores which would not handle it began to call for popular-price hose possessing some merit in construction, finish and character of silk content. Thirty-nine gauge conforming to high standards was acceptable for the low price brackets. Of course the output of this gauge is not so great as a few years ago, when its only competitor in gauge was 42.

Observation, supported by statements of manufacturers, indicates that A-1 hose of either gauge is in far greater demand than all finer gauges combined multiplied several times over. And it has been demonstrated by the experience of several so-called popular price retail stores that it is far from necessary to offer full-fashioned silk hosiery at the counter for less than one dollar a pair. Stores which tried it, without success, might be mentioned by name, together with the names of several mills from which they obtained the goods. Women do not expect to buy a worthwhile stocking for less and many are skeptical of stockings exploited at lower prices, unless described as inferior in some way.

Gimbel Brothers' New York store ran a sale in June of two pairs of irregulars for one dollar. The term "irregular" is so elastic that, except upon inspection of the hosiery, it would have been unfair to the seller to say, for example, "that's all it was worth." It might be assumed, however, that ordinarily two pairs of full-fashioned silk for one dollar would be more accurately described as "seconds" or "thirds".

Irregulars have been offered at ridiculously low prices recently, however, for the reason, as stated by holders of troublesome lots, some of the mills selling nationally advertised brands have been letting their customers have fair quantities of first grade at about the price of the slightly defective, rather than depart from their list, and the stores usually disposed of all they could get at "an irregular price yielding a 'regular' margin of profit".

The American statesman who in a recent public address said in effect that business takes care of itself, always recovering from conditions of which it is the cause, was not, of course, addressing his consolation to any class of business interests, but what he said will apply to hosiery specifically. There is evidence of sporadic improvement now for some few mills. Uninterrupted going ahead hardly would be looked for by anyone. Rather is it the belief that deflation will be a long drawn-out process and that by the time it has run its course there will be fewer producing mills than when inflation reached its peak. Meanwhile there will continue the battle between seller and buyer, and the latter is the element that seems most in need of a corrective in the matter of ethics.

"Big" Buyers Prone to Push Mills for Some Extraordinary Concessions

IT MAY BE not new to many manufacturers that certain chain store organizatoins are offering what look like tempting orders for given numbers in men's and children's hosiery, a stipulation being that no manufacturer receiving the order will accept orders for like numbers from any other store in the same class—that is, chains and catalog houses are to be treated as preferred buyers. The buyer orders samples for each of the stores in the organization and lists the goods with these stores. "As we get orders," the buyer tells the mill management, "we will send them to you and have you ship direct. It might be well to make up a few thousand dozens, for we shall expect prompt shipment."

A specimen contract of this kind provides for price protection in the event of declines in the market, but

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the buyer is to pay no more should the market advance. It is the experience of manufacturers who have had relations of this character with certain buyers that when there arises a dispute over the terms of the contract, the buyer simply sends no shipping details. It is related of an Eastern Pennsylvania manufacturer that his mill is carrying many thousands of dozens of children's hose for a single chain store organization, this stock being valued at as many thousand dollars as represents the capital of some of the fair size mills. This method of chain store and catalog house buying is for the time impoverishing a few manufacturers; it will make none of them wealthy. It is being applied in a more general way than ever, to various textile items, notably those to which fixed low prices with which the public is familiar can be applied.

Asks Mills to Insure Hosiery Dyes.

A chain store organization often referred to as "five-and-ten" is suggesting to manufacturers from whom it buys hosiery to be sold for five or ten cents a leg, as the case may be, that they carry insurance for protecting their distributors against claims which may be made against them by customers alleging their feet have been poisoned by dye in the stockings. A letter from a buyer was made public quite recently. In it he tells the manufacturers:

"We have been made defendants in a damage suit instituted by a person who purchased a pair of half-hose in one of our stores and who claims he was poisoned in both feet by this half-hose. One of the stockings was sent to the manufacturer, who had the company which furnished the dye analyze it. They reported there was nothing injurious in the dye, and now the manufacturer refuses to have anything more to do with the case, after having enjoyed business from us for several years."

Some interests, to whom a copy of the letter was submitted for comment, point to the last sentence in the paragraph quoted as containing an implied threat which is clinched in the succeeding paragraph of the latter in which the buyer states:

"Should similar action be brought against us at any time in the future and the stockings that might be the cause of such action were made by you, we would look to you to fully protect us and defend the case without expense to us. We believe it will be possible for you to get insurance at nominal cost that would take care of matters like this."

The buyer, for making more impressive his claim for protection for his organization's customers, says that in thirteen years "we have had only three similar complaints. One never was heard of after the first notice to the store. One, in March, 1913, was settled for $30. The suit in the present case is for $30."

Possible Litigation over Pending Patents Basis of Confusion in the Markets

NOT ALL of the evils in the hosiery markets can be properly charged to buyers who rate themselves clever. Manufacturers themselves are responsible for so many of the ailments that it seems inconceivable

Standard
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SPINNING — we emphasize this word because yarn that is properly spun, with the uniformly correct twist, free from slubs, makes better fabric or hosiery.

Standard Yarn—natural, bleached, mercerized and dyed —every process carried on in our own plants to the most rigid specifications, assures you the quality you require for profitable reproduction.

STANDARD-COOSA-THATCHER CO., Chattanooga, Tenn.
Executive and Sales Office, Lafayette Bldg., Philadelphia

Standard
MERCERIZED YARN

any worthwhile number will give serious thought to the proposal of department stores, chain organizations and catalog houses to yield to importunities for any further concession in the way of accepting orders that can be disregarded at buyers' will, and extending guarantees on dyes, for the sole benefit of the stores at the expense of the mills. Not the least of the disturbing features in the marketing of hosiery is the number of patents, the validity of which remains to be tested.

Textile Machine Works recently served notice of possible action, on manufacturers using German built machines to which they have attached the company's device covered by Patent 1,731,628, for knitting French heels and French clocks and a variety of heel designs. In a notice to such manufacturers, through a letter of the company's attorneys, it is stated:

"In order to avoid as far as possible undesired legal proceedings in defense of their rights, the Textile Machine Works respectfully requests that you give the question of infringement your considerate attention and advise them your attitude in case of apparent conflict with said Patent No. 1,731,628 or any other of their patents."

This warning is preceded by a statement that "We are informed that such an attachment (that covered by Patent 1,713,628) is now more or less generally applied to certain imported knitting machines of the type used in your mill."

When first publicity was given to the fact the notice of possible infringement proceedings had been issued there was reported a demand from buyers of hosiery made by manufacturers who might be adjudged guilty of infringement, that they, the buyers be given protection in the event of litigation in which they might become involved. An unconfirmed but trustworthy report is to the effect the American representatives of imported machines have united to assure users of their equipment all due security against the consequences of any suits which may be filed.

Westcott Grenadine, Most Talked-of Stocking, Moves Rival Mills to Antagonism

ONE OF the most talked about patents is, of course, that of the Westcott Hosiery Mills, Dalton, Ga., covering the company's form of grenadine hosiery. It has caused more talk than confusion, although many buyers seek to make it appear they are uncertain as to just what purchases to make for stocks for department stores. The stores represent that when they put in grenadine they will want a guarantee that their customers are receiving grenadine. As a matter of fact, buyers for some big stores talking dull finish are buying delustered tram silk, to sell for a dollar a pair. But manufacturers and silk throwsters, envious of the prestige enjoyed by the Westcott company, want the validity of the patent tested in the courts.

So long as there has been no ruling by a court of record on the moot question of whether the grenadine stocking of the Westcott company is patentable, buyers will seek an advantage in the confusion which they themselves are causing as a buying expedient. Meanwhile the Westcott company is the recipient of more gratuitous advertising than has been accorded any hosiery manufacturer since suits over the pointed heel became common everyday affairs. It remained for a southern mill to precipitate the biggest hosiery sensation of the post-war period.

There was observed in a department store several weeks ago a placard on a display of hosiery reading "grenadine crepe," a descriptive term which must be said to have been the creation of either an ignoramus or some one bent on deception. Subsequently what proved, upon a technical examination to be a cheap quailty of grenadine, was stamped "warranted crepe." There have been other developments of a character tending to illustrate the value of the name grenadine since the Westcott patented process first was exploited.

Some mill men professing to see disturbance for the trade in the patent, admit that a royalty of 25 cents a dozen or thereabout would be a small price to pay for the guarantee which they represent buyers for the trade will demand when they contract for what purports to be grenadine hosiery. These same manufacturing heads are, some of them, aiming to have the patent set aside, apparently overlooking the probability that if that were done and dull finish stockings became the rage, the markets would be as much oversupplied as they ever were of tram silk stockings. Interests producing genuine crepe hosiery are, perhaps unwisely, antagonistic to the Westcott grenadine patent, for the reason it gives protection to a type of hosiery that is a competitor of crepe and costs dealers materially less.

There is on the market a dull finish stocking of four-thread silk 45-gauge, with picot top, available to dealers for $12 a dozen. This was, at any rate, a price quoted to responsible buyers a few weeks ago and there is no evidence of any increase in production costs that would add to the price of the stocking unless there had been lessened production or greater demand. The price was out of line in two respects—on the basis of actual first cost to the manufacturer, and in contrast to a common quotation of $12.50 on very fine gauge Guildmode crepe hosiery, circular knit, and having no picot. This was one instance of full-fashioned being priced lower than a circular knit of comparable gauge and fabric.

While the introduction of the Westcott patented grenadine started a real commotion, it cannot be said that any form of dull finish, notably crepe, has yet proved a claim to popularity. By no means all of the stores are showing dull finish stockings, and some which do, report that women do not as a rule ask for them; that they have got to be pushed to be sold in worthwhile quantities. Buyers for the stores sometimes, of course, refrain from speaking as they think. But it is admitted generally that unless women clamor for crepe stockings they will have to be very much pushed to be sold, for the price is about $1.95 a pair, minimum, and it is said tram silk at $1.50 a pair also looks "smart", a term often applied to the dull as an appeal to an element among the patrons of hosiery counters.

A chain store organization, intimating a need for insurance against poisonous substance in hosiery dyes, one group of full-fashioned machine builders deeming it expedient to protect users of their machines against

a possible infringement of a rival; questioning the patent on grenadine hosiery and suggestions of guarantees of the type of fabric pending a test of the patent, are not all of the items the importance of which certain buyers are given to magnifying when dickering for an advantage. Infants' socks also are to be a subject for protection against adverse effects of possible patent litigation. Three leading manufacturers using the Fidelity wrap around machine which produces infants' socks top in the vertical or wrap around design in tubular ribbed fabric in the knitting will protect their trade against infringement suits which might operate to their disadvantage as distributors. These three manufacturers are protected by a contract with the Fidelity Machine Co. which provides among other things that no duplicates of these machines are to be supplied to anyone not having them at the time the contract was executed.

Hosiery Prices and Statistics Show Curtailment Too Much Curtailed

IT THUS APPEARS that, aside from the damage to the markets by overproduction, there is no lack of subjects commanding attention from the standpoint of the uncertainty of their bearing on distribution, as well as manufacturing.

It appears from the statistical reports of production, stocks, orders and shipments for April, curtailment was not carried sufficiently deep in the first four months of the year to materially improve the primary market situation. The statistics of course do not supply information conclusive in character, as they embrace reports from producers of less than 67 per cent of the total value of hosiery reported in the census of 1927. But the showing conforms to what is known generally in the trade.

Comparing with April, 1929, the production of hosiery, all classes, this year, as reported by 286 identical manufacturers, declined only 16 per cent, approximately. The drop in women's was about 42 per cent for seamless, all classes, and two per cent for full-fashioned, all classes. It is in women's full-fashioned that is heard the chief complaints of surplus stocks. Shipments of full-fashioned increased by 94,118 dozens and orders booked during the month showed a gain of 58,027 dozens. But stock on hand, finished and in the gray, on the first of May was reported as of 1,088,864 dozens more than on the corresponding date of May, 1929.

Seamless hosiery, all classes, made a better showing than did full-fashioned in the matter of adjusting production to market absorption. Stocks of reporting mills on May 1st were 34 per cent less than on the corresponding date of last year, having declined to 460,553 dozens from 724,481, comparing with an increase of 28 per cent for full-fashioned.

It was stated in a letter of a prominent southern manufacturer to a representative of his mill a few weeks ago that it was common rumor two large mills alone had a stock of more than one million dozen pairs. He had made a survey of conditions in connection with visits to the leading American hosiery wholesale markets.

Stripper X
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Pieceful Penetration
for knitters and weavers means
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and it is just as good, just as thorough, for yarns in rope, skein or package.
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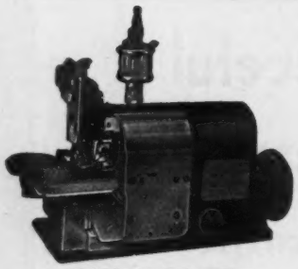

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INQUIRE ABOUT NEW MERROW MACHINES

STYLES 60-ABB and 60-D3B

For simultaneously trimming and joining ends of cotton, silk or woolen piece goods with a

FLAT BUTTED SEAM

Permits goods to pass through finishing machines, uninterrupted, for such operations as Shearing, Calendering, Mercerizing, Bleaching, Dyeing and Printing—with *remarkable saving*—both in labor and fabric.

Butted Seam, natural size, made by STYLE 60 ABB MACHINE on Cotton Goods which have been subsequently processed. The STYLE 60 D3B makes a similar though much wider seam designed for use on sleazy or loosely woven goods to insure holding.

OTHER RECENT DEVELOPMENTS—FOR THE RAYON TRADE

STYLE 60 RD —For a three-thread overedge finish, either straight or scalloped, on Rayon Bedspreads and other sleazy articles on which the ordinary edge finish will not hold.

STYLE 60 JDC—For two-thread **FLAT SEAMING** on Rayon Underwear.

Let Us Demonstrate the Work of These and Other Machines on Your Own Fabric.

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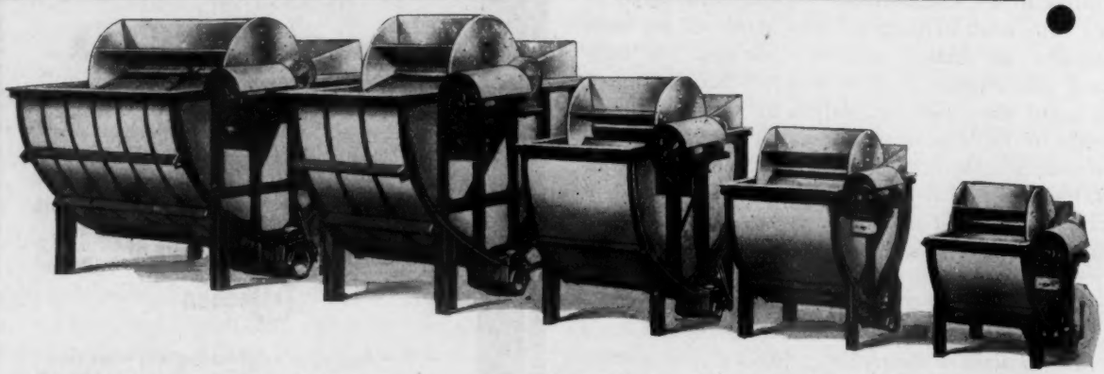

STRICKLAND MONEL METAL PADDLE DYEING MACHINE, Motor or Belt Driven, in a Sturdy Cast Iron Frame

Hosiery dyers will welcome the corrosion resisting cast iron frames, mono-cast side frames and cast iron angle end frames.

These frames are made extra heavy and rigid to reduce vibration. Motor, belt or chain drive at your option. Capacities 5, 10, 25, 50 and 100 lb. sizes. Other sizes built to order.

Write today for price and delivery.

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Chattanooga, Tennessee

Probably the sharpest drop of any one hosiery item in April production was in women's seamless silk and rayon in combination—from 100,018 dozens last year to 19,872 this year, or about 80 per cent. Both silk and straight rayon made slight gains in April over the corresponding month of last year. The prices of hosiery quoted attest to a large surplus, which in turn shows that curtailment has not gone deep enough. But two months have elapsed since the reports referred to were compiled. It seems a safe assumption that curtailment in full fashioned hosiery has been more drastic than that indicated for April.

Stocks of children's hose and infants' socks showed a healthy degree of curtailment in April, but as to children's it by no means balanced the decline in net shipments from 811,816 to 587,962 dozens and the drop in unfilled orders on May 1st. This falling off was more than 51 per cent. A better poise was shown in relation to infants socks. One concern is showing 32 patterns in one general line for the opening for 1931.

Children's hose fall orders are slow coming, is the common complaint in the primary markets. Particularly is there absence of demand for seven-eighths length, the five-eighths and half socks apparently maintaining a strong lead. Children's anklets are going into distribution in probably greater volume than last year, but there is said to be little call for women's sizes. The anklet demand has been confined almost exclusively to 25 and 50 cent numbers.

Repeat Orders for Wool Half-Hose.

The dead calm in the hosiery market for a time last month was interrupted on several occasions by repeat orders for men's fancy wool socks for fall deliveries. Two important jobbers—one in New York, the other in the Central West—left the orders with selling agents on Worth street, New York. Both made commitments for fair size lots. An interior Pennsylvania manufacturer using Standard Trump Brothers machines is presenting a new dollar line with knitted in designs, which are free from loose threads. The fabric is light weight worsted and the knitted in stripes and other effects are pure thread silk. The stocking comes from the Unrivaled Knitting Mill, at Williamstown. It is one of the new things that bespeak a continued prevalence of men's fancy socks. Another dollar half-hose line is of silk and rayon, in exclusive designs, by the Schuylkill Hosiery Mills, Reading, Pa. Both are well established in the trade and move relatively freely, which is in strong contrast with the unsatisfactory situation as to fancy half-hose in the 25- and 50-cent price brackets. Twenty-five cent numbers, put out in some remarkable effects, considering the prices, are running high in shipments but low in price to jobbers.

The Next Move in Hosiery?

A retrospect of some of the changes which have come about gradually in the last few years in hosiery merchandising suggests the question, what departures from present practices may be witnessed in the long and tedious process of deflation?

Around three years ago a pivotal type of silk full-

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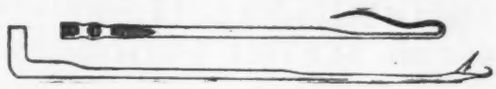

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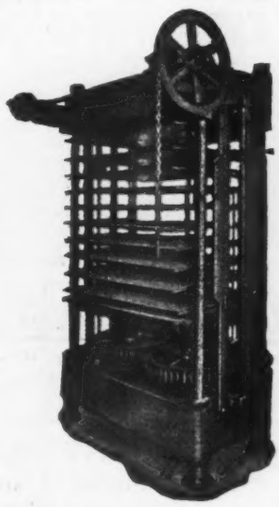

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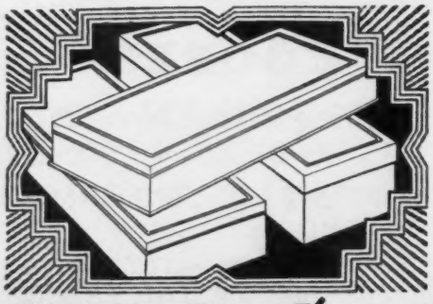

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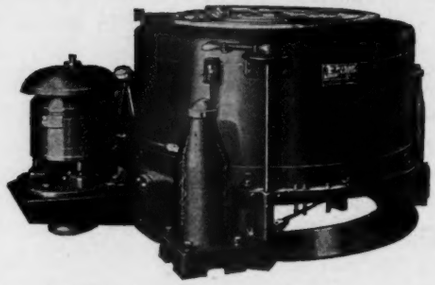

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Standardized Machine for Laboratory Washing Tests

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And Sun Fading

For more than a decade Fade-Ometer has been forstelling, speedily and dependably, what sunlight will do to color in cotton cloth. Today this method of measurement finds world wide application. 43 Fade-Ometer hours give sunlight reaction equivalent to a month of June days.

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Cotton Mercerized Tapes, Spool Tapes, Bindings and Narrow Fabrics for Underwear and other Trades.

fashioned stocking with mercerized hem was fetching $12 a dozen from jobbers. It is sold now by the same mill for $9 a dozen, and similar can be bought for $8.75 by retailers.

The dollar stocking of today was seen only on the basement counters in leading department stores. Now it often is found in the more conspicuous places on the main floor.

Very recently a branded line of 48-gauge three-thread stockings, with picot top, were sold in department stores for $1.25, said to be the lowest price heard for branded hosiery of this high character. Dollar Bemberg full-fashioned of a few months ago is priced 78 cents and dragging.

Other prices quoted to large retailers in the last few weeks include $9 a dozen for five-thread silk 42-gauge a half dollar a dozen more for four thread 45-gauge, and $10 for three-thread 48-gauge, all described as first grade tram silk, being dumped to make way for dull finish, and for the same reason six-thread 39-gauge marked down to $7.25 and 42-gauge of the same strand silk, $7.50. Hosiery prices are turning the clock back 15 years.

Ingrain, the aristocratic stocking of a very few years ago, is giving way to dull finish, and manufacturers have been having meetings with the object of taking steps for perpetuating ingrain popularity.

Most of the novelties of the last five years have disappeared totally. Many had a very short existence which was even too long for some of their promoters —for example the knee length embroidered in colorful designs.

Black heels dropped out after making money for mills which dropped them opportunely. Bareleg stockings limped through part of last summer, and leftovers of 1929 $1 numbers are being freely offered for 79 cents—and few takers.

Ridiculed by the elite among manufacturers a year ago, 39-gauge silk stockings became a large and profitable seller for the dollar-a-pair group and now is being relegated to a lower bracket by 42-gauge, rated the bread and butter production of numbers of manufacturers out for the better dollar trade.

The sensational and quicker changes have been in volume of production as gauged without referring to statistics. The full-fashioned mill that was not operating 16 to 24 hours a day a twelve-months ago was the exception, rare as the mill now on full time with single shift.

Lessened cost of production is the result, mainly, of lower prices for raw silk and reductions in salaries and wages. With manufacturers having gone, apparently, to the bottom in reducing cost and narrowing profits, will the next step in merchandising be corresponding economics by large retailers?

Bears in Underwear Markets Buy Late and Pay Early Prices

LARGE BUYERS for the trade who have been consistent bears in the heavyweight underwear markets and who still are not bullish, are doing some buying and paying the prices against which they had rebelled in their excessively bearish movements. This is in accordance with the confessions of several of the lead-

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ers in the jobbing fraternity.

"I thought I was late," said a buyer for a large jobbing house, commenting some days ago on having placed his initial orders for men's heavy weight cotton ribs. "Comparing notes with other buyers,' he states, "I seem to have operated early. To the beginning of June not more than 25 per cent of the underwear ordinarily used in fall deliveries had been contracted for, in my opinion," the buyer said.

This estimate may be low, but selling agents in the vicinity of Broadway and Worth streets, New York, admit they are very much "put out" over late buying. Some say they doubt if by the beginning of August jobbers will have bought more than 50 per cent of the quantities that ordinarily are shipped out by the end of September.

Late underwear buying simply is part of the game of passing the buck. Jobbers state, and they probably are not exaggerating, the retailers are less than 25 per cent bought for fall. The manager of the underwear department of one large jobbing house says he looks for a shortage of late delivery heavy weights, and "hopes there will be, just to teach the retailers that two can play at the game of passing the buck".

Retailers have been urged so often to do some early buying, if for no other reason, to give mills some support. "They always have laughed at us when we intimated possibility of a shortage, and I am satisfied they never will suspect anything of that kind could be possible, as they invariably got all the underwear they wanted and when they wanted it. I'm for a shortage this year," said the buyer. He is contributing to such a consummation in placing virtually no orders except to take care of current commitments to retailers.

Heavy weight fleeced cotton underwear is reported faring so badly this year that some factors say they would not be surprised if output will be fully 75 per cent less than in any recent season. Fleeced cottons are one of the hardest hit items in underwear, seems to be the general opinion.

Men's light weights have become so largely a lingerie item that it is difficult to give it fair treatment in any underwear market survey. Golf drawers, the type of pantalettes in which men may be seen around the locker rooms after making the round of the links, seem likely to continue for years as the companion piece of athletic shirts. The latter may be said to be favorites more particularly because of the ease with which man may get into and out of them, rather than as serving the purpose for which summer underwear originally was created. Summer weights have been moving in right good volume, and they yield a substantial margin of profit for retailers favorably located. Knitted union suits of the better and the cheaper grades in cotton are in good request despite the popularity of shorts and rayon garments.

Sales of women's cotton underwear are reported continuing steady. Trading in summer weights is said to be probably on a somewhat higher level than in 1929, and there is better booking of orders for medium weights, for fall deliveries, according to a few leading manufacturers. Orders for summer numbers are not infrequent, but are for small quantities. A reasonable amount of fall business has been booked. It is likely sales of women's cottons for 1930 will show a healthy increase over last year, say some wholesalers.

Increases Full-Fashioned Equipment.

THE Colonial Knitting Mills, Inc., main plant in Philadelphia, is adding 42 full-fashioned machines to its Mill No. 3, at Mohnton, near Reading, which will represent an 85 per cent increase in equipment in a few years. The company recently completed an extension work which was started before the slump in the markets became pronounced. It is stated, however, the Colonial is receiving orders which will keep the Mohnton plant engaged to capacity.

Mill No. 2 of the Colonial company a small plant in Philadelphia, is again in production, after an idleness of a few weeks during which the machines were equipped with the Textile Machine Co's. attachment for forming the French and fancy heels and knitting lace clocks.

Rayon Polo Shirts Most Active Item in the Broad Field of Knitted Outerwear

AN ITEM in knitted wear of which there has been a shortage for spot delivery is the rayon polo shirt. It is inexpensive and is regarded nifty. It sells for popular prices in work clothing stores patronized by men exclusively, and in women's shops, where it is shown much respect in the better grades. A Philadelphia manufacturer of overalls and work shirts this year, when orders for such goods fell off, started a polo shirt department, and it kept his factory busy. A manufacturer of women's fine gauge rayon underwear has had a steady run on polo shirts ranking as classic for feminine wear, and in June brought out a dollar line for both sexes. The polo has its big field in the sports element, but is a utility garment, for street wear. It is reported by retailers cutting into the business of regulation street shirts and is said to be substituted in appreciable degree for light weight sports sweaters, which, by the way, have had a slow season thus far.

Sweater manufacturers for some time have been operating in a declining market for both cotton and worsted yarns. They had yarn prices guaranteed against declines, and gave their customers price protection. There have been numbers of cancellations, however, and the average manufacturer is not pushing for orders except for the more highly prized accounts, while jobbers are delaying commitments to an extent that leaves manufacturers facing an unusually busy fall and unable, in the remaining time, to get off a normal season's production.

Bathing suit manufacturers have about completed shipments for a comparatively good season, some selling their entire production early. There is no scarcity of bathing suits, however. Nor is it likely dealers will be left with many of the 1930 models to be carried into 1931, when the garments, according to manufacturer predictions, will be lighter in weight and skimped in yardage.

To build up success requires work and application —we must read and study and reflect.